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Original Articles.

THE NON-SURGICAL TREATMENT OF HETEROPHORIA.*

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Had I chosen my own title I should have omitted the word "non-surgical," because in my practice I have concluded that there is no surgical treatment, properly speaking; and that any operative treatment whatever of heterophoria is not only useless but bad. For, not only does it not cure, but, in my experience, it makes real cure far more difficult, sometimes even impossible. I say, "in my experience," which is in private practice, with intelligent and co-operating patients. In hospital practice there may be rare cases in which operation is required. For six years I have seen no case of heterophoria needing operation, and none unsatisfactory when treated with common sense instead of with scissors. Of course, if the scissorer's design is to create mental effects in the patient and financial ones in both patient and doctor, that does not lie in the province of medicine, and we may look, smile, and go about our own business. But, if the object of scissoring is to lengthen or shorten a tendon, it seems to me that one will soon arrive at two or three indisputable facts: 1. In the vast majority of cases heterophoria is an innervational affair. 2. It depends upon errors of refraction. 3. Proper spectacles are the principal and effective means of cure, with the aid of prism gymnastics in exophoria. It seems unnecessary to add that it should go without saying that all other intercurrent complicating, or systemic conditions that are causative of ocular weakness and imbalance must have been diagnosticated and treated. Sometimes, certainly, such are alone responsible for the mischief. The oculist who is indifferent to or ignorant of such general causes, is not, as he should be, a physician before being a specialist. He is only one grade better than the pseudo-oculist who treats all eye-strain as due to systemic causes.

As to hyperphoria, owing to the narrowed range of muscular action of the vertical muscles some cases appear to be peripheral rather than central in origin, and with such the question would seem to be pertinent, why not tenotomize? My answer to that would be Yankee-like: Do you know a surgeon that you would trust to operate upon your own hyperphoria? I am sure that if I had ever so high a degree I would endure the evils that I had rather than fly to others I know not of. Perhaps, however, the choice would be precisely because of evils witnessed and known. For instance:

CASE 4077.—This was a professor who for a few degrees of hyperphoria had the right superior rectus "snipped" by a famous oculist, and the left eyeball was so frightened that it tried to hide under the upper lid, producing a bad effect upon the onlooker and for the patient diplopia, loss of occupation, and great wretchedness, financial, social and psychic. There seemed nothing for it but an advancement. But, before submitting he came to me. Under strict promises of secrecy not to divulge his colleague's name, who occupied a chair in the same college, I undertook the doubtful task of curing a traumatic hyperphoria of seven degrees without other surgical instruments than a couple of pieces of glass! In snipping a snip the snipper had utterly ignored a tormenting astigmatism. A partial prismatic correction added to the cylinders subsequently reduced, finally made my friend shower me with benedictions whenever we met. He does not now refer his patients to his fellow-professor!

The highest degre of hyperphoria or hypertropia I have successfully treated by refractive methods was that of:

CASE 3681.—A lawyer had 15 degrees and had been advised by a dozen or two of the best specialists to permit tenotomy. He had shrunk from following the advice although diplopia and subjective symptoms had come near wrecking his health and his business career. When he came to me, I of course found that his ametropia had been ignored or mistreated. I combined with his spherocylinders 12 degrees of prismatic correction and in a short time this was further reduced to 10 degrees. Health and happiness were completely reinstated in six months.

I do not think I have a dozen patients wearing prisms permanently for the correction of hyperphoria. Under proper ametropic correction these, like most heterophorias, disappear. It is only as regards this and the frequency of required operation that I differ from my friend, Dr. Reber, in the conclusions which he draws in the most excellent study of 150 cases of heterophoria read before this Section last year at Atlantic City. The factors of proper treatment are:

1. The absolutely accurate estimation of the refractive errors by cycloplegia and the subjective method and the prescription of spectacles and their adjustment according to the hundred modifying conditions of the individual case.

2. When the hyperphoria is 3 degrees or over, a temporary but partial neutralization by prisms may be necessary to tide over the period required by Nature to reinstate a normal balance of innervation.

3. Supplementary ocular gymnastics, mere excursions of the eyeballs upward and downward, etc., aid in bringing about balance.

4. Instruction in ocular hygiene is frequently helpful. The book or writing habitually placed too far below the horizontal plane may be productive of much eye-strain. High arm-chairs and other similar devices would vastly lessen the sufferings of many people.

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Esophoria of a symptom-producing kind, like hyperphoria, is extremely rare, is innervational, and is dependent upon ametropia. Permanently worn prisms of course only increase the disease, and tailoring the tendons is utter delusion. For example:

CASE 2996.—A literary worker had both internal recti cut, reducing his esophoria of about 18 degrees to orthophoria for a month or two, but finally resulting in a reinstatement of all the old imbalance. Again the intense sleepiness came back and again the scissors were appealed to, but with precisely the same results as before. After a year of proper ametropic correction the esophoria is 6 degrees and as much happiness exists as is ever possible after the peripheral mechanism has been uselessly mangled.

Equally instructive is the case of a studious minister, who, with extreme use of the eyes at near range, has not a symptom and yet he has 20 degrees of esophoria. He requires only accurate correction of his ametropia. Hundreds of case-records show either a reduction of esophoria to a normal balance by means of ametropic correction alone, or, if not always so, there is complete absence of symptoms. Data and methods of treatment are:

1. Normal balance or physiologic orthophoria is for city-folk and near-workers, 2 degrees or 3 degrees of esophoria estimated by the Maddox-rod test, at 20 feet with suspended accommodation.

2. When there is less than 2 degrees the tendency and result is exophoric.

3. Orthophoria is almost surely a disease, likely to be worse than the higher degrees of esophoria.

4. Esophoria from 3 degrees to 6 degrees produces no symptoms with proper ametropic correction.

5. Esophoria above 6 degrees and up to the strabismic limit may or may not produce symptoms of eye-strain.

6. All esophoria is curable or at least modifiable by convergence-repression, i. e., by high corrections in hyperopia and by low corrections in myopia, but above all by proper corrections of astigmatism and anisometropia.

Exophoria, or insufficient adduction-power, is the most frequent, 50 to 1 surely, of all heterophorias, and, fortunately, the most amenable to treatment. I greatly dislike rules and laws in the practice of medicine, because there may be almost as many exceptions to almost any rule as there are instances in proof. But in a general way, I find by experience:

1. Real exophoria or insufficiency of adduction-power in a near-worker may exist and be productive of mischief when the 20-foot test shows 1 degree or 2 degrees of esophoria.

2. Orthophoria is usually exophoria, i. e., it is a disease. There is in city-dwellers, usually, an insufficient innervational power of the interni, with 20-foot balance.

3. With positive 20-foot exophoria, eye-strain and brain-tire exist in proportion to the degree of the defect.

4. Cure by prism-gymnastics is quick according to the youth of the patient, and the lowness of the degree, slow in proportion to the greater age, lessened vitality, and highness of the degree of the exophoria.

5. A not infrequent result of the prism-gymnastic treatment of exophoria is the continuance of more or less of the original exophoria as measured by the 20-foot test, but with an increase of the adduction-power five or ten, or even twenty times, there will finally come a cessation of the symptoms.

6. Having attained this high adduction-power, with relief of the symptoms, a continuance of the prism-gymnastics must be kept up occasionally with the highest power prisms, to prevent, as in any function, deterioration by disuse.

The only methods of treating exophoria of which I have any experience are:

1. Accurate estimation of the ametropia, and its correction according to the exophoria to be overcome. Low hyperopic corrections and high myopic corrections are, of course, the rule, according to the degree of the defect, but also according to the hundred of co-operating conditions, the power of accommodation, the presbyopia, the anisometropia, the age and vitality of the patient, the severity of the symptoms, the occupation, the responsiveness of reaction to prism-gymnastics, the adduction-power, etc. No finer problem or more complex one exists in medicine than this of prescribing glasses in exophoria. The prescribing optician, the "ophthalmotrician," or even the six-weeks' post-graduate specialist may not be trusted with it any more wisely than a baboon with an astronomic observatory.

2. With all fitting deference to wise advisers, I am unable to see or to imagine what least good could be accomplished by the use of so-called gymnastics with weak or low degree prisms. Attempting to jump over a thirty-foot wide stream by a two or three-foot jumper can result in little more than a deserved cold-water bath. Two or three degree helps can not meet the indications of a twenty or fifty degree weakness.

3. The gist of the matter is to increase adduction-power until it is equal to the demands. This increase of power is easily, quickly, and infallibly procurable by daily exercises with prisms, bases out, and as rapidly as the power rises, the prisms increased in degree until either the exophoria has been replaced by esophoria or the symptoms have all disappeared. Hold the power gained by occasional exercises, according to the amount of near work demanded of the eyes and also according to individual tendency to reversionary weakness. In low degrees of exophoria a frequently effective method of treatment is by what I have colloquially designated, "thumb exercises." These consist in the patient holding the thumb at arm's length on a level with the eyes and gazing fixidly at the nail while the thumb is brought accurately between the eyes as closely as is possible without any failure of the eyes to converge. The instant divergence or diplopia is detected, withdraw the hand again to arm's length, and thus continue these rhythmic exercises for several minutes, several times a day. If the increase of adduction-power and the relief of symptoms is proved insufficient, then the method of prism-gymnastics must be instituted.

4. The technic of prism-gymnastics in exophoria is: *a.* Begin with the highest degree prisms with which the images of a point of light are kept single. *b.* The prisms should be square and not round and must be accurately mounted and accurately adjusted. Holding the prisms in the hands as has been advised does harm, not good. *c.* The exercises should be ordered about four times a day, for about five minutes at a time. *d.* They should be with the object gazed at fixedly and earnestly ("with knitted brow," "savagely"). The distance of the object should be varied by an attendant, or by walking about, from 10 inches to 20 feet or more. The prisms should be raised away from the eyes and lowered about twenty-five times while gazing at differently distanced objects, during each seance. *e.* The patient

should be instructed to distinguish and guard against outward rotation of one eye with diplopia, etc.—a quickly harmful procedure. *f.* So fast as adduction-power grows, the strength of the prisms should be increased. This will usually be by 3 degrees or 5 degrees at a time, and every two or three days, until the limit is reached, esophoria induced, or the symptoms disappear. I have sometimes carried the adduction-power as high as 80 or 100 degrees before the desired result appeared. *g.* With a wished-for increase of adduction-power there is likely to be a change of ocular pressures and corneal curvatures so that a retesting of the ametropia becomes necessary.

It seems useless to take up your time with a brave array of case-histories. Hundreds, perhaps thousands, could be collated. The lessons derivable from them is all that seems necessary. The chief ones I gather from mine are as follows:

The infinite patience and clinging to hope on the part of the physiologic and neurologic ocular mechanism is a constant source of wonder and delight, and teaches the daily law to help Nature along the lines of her desires by common-sense and physiologic methods. Her motto is surely *nil desperandum,* and it should be ours. We shall rarely fail when we try to aid Nature's method of spontaneous therapeutics. We should beware of our impertinent surgical short-cuts. Surgery is the despair of medicine, and we should never adopt surgical methods while there is a glimmer of hope by natural means and in the directions indicated by the subtle and inherent strivings for normality. To show but one case illustrative of what Nature and the doctor may do when they work together let me cite:

Case 2870.—A physician's little girl of 7 came to me with 28 degrees of exophoria, i. e., her exophoria was really exotropia, the divergent strabismus being habitual except under the stimulus of the violent will to converge, when binocular vision was possible for only a few seconds. With a 3-degree prism, base out, this temporary power was impossible. I would not consent to operation. It took about four years of treatment. But to-day the child has slight esophoria, constant binocular vision, perfect acuity, and absence of all eye strain.

Even in cases of positive strabismus natural or non-surgical methods may prove effective if the patient is taken in hand sufficiently early in life, before amblyopia has become too pronounced, and before morbid habits have been too long continued.

THE OPERATIVE TREATMENT OF HETEROPHORIA.*

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On what cases of heterophoria should we operate? On what muscle should the operation be done? What kind of operation should be done? These are all questions that should be answered by the operator before undertaking this class of work. Certainly, an innervational heterophoria should never be operated upon. A pseudo-esophoria is always curable by convex glasses. A pseudo-exophoria is likewise curable by concave glasses. There are cases that present themselves now and then in whom there is a want of convergence innervation, i. e., there seems to be a fault in the third conjugate innervation. This condition, as a rule, should be treated by exercise, though occasionally an operation must be done.

No operation should be done in cases of heterophoria, intrinsic in character, that can be relieved by gymnastic exercise, even though this treatment should have to be resorted to for a long while. Nor should those cases be operated upon whose muscle error is small, and for whom comfort can be obtained by the wearing of weak prisms in positions of rest.

The heterophorias not curable by correction of errors of refraction, by prisms in positions of rest, or by rhythmic exercise, should be subjected to operative procedure. Such cases are not infrequent, and the relief from operations skilfully done is by no means uncertain. There is no department of surgery that requires more care in the making of the diagnosis. The condition of every extrinsic ocular muscle must be determined before any one muscle is to be operated upon. There are but two objects in view in muscle operations, the one is altering the tension of the muscle, the other is changing its plane of action.

In order that I may be the better understood when I speak of the operation involving the changing of the muscle plane, it would be well to define it. The rotation plane of any muscle cuts the center of origin of the muscle, the center of rotation of the eye, and the center of the muscle insertion. The axis of rotation is always at right angles to this plane. The plane of an internus or an externus muscle may coincide with the horizontal plane of the eye, when, of course, the vertical axis of the eye becomes the axis of rotation. In such a condition the contraction of an internus or externus will effect only one motion, viz., the rotation of the eye directly in, by the internus, or the rotation of the eye directly out, by the externus. When the center of attachment of the internus is above the horizontal plane, no longer can the muscle plane coincide with the horizontal plane, and a contraction of the internus results in a complicated movement of the eyeball. An internus thus attached not only turns the eye in, but also turns it up and torts it in. The center of the insertion of an externus above the horizontal plane results always in a complicated movement, turning the eye out, turning it up and torting it out. When the centers of attachment of these muscles are below the horizontal plane, the secondary results of their action are the reverse of those mentioned, i. e., a too low internus turns the eye down as well as in, and torts it out; a too low externus turns the eye down as well as out, and also torts it in.

The tension of a muscle is to be altered either by a central partial tenotomy, as when operating on the too strong muscle; by shortening the muscle in the line of its original plane or by advancing it straight forward, as when operating on the too weak muscle. In making either one of these operations the existence of a cyclophoria must be first excluded. When there is cyclophoria complicating any one of the other heterophorias, the operation on the rectus muscle should alter the tension of the muscle and at the same time change the plane of its action. In such a case a partial tenotomy should not be central only, but should include those peripheral fibers, a division of which would be corrective of the cyclophoria. A shortening should be done in such a way as either to raise or depress the plane of action of the muscle as might be indicated by the complicating cyclophoria. In making advancements, the new attachment should be

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carried either higher or lower than the original attachment, as the character of the cyclophoria might determine.

The operation to simply alter the tension of a rectus muscle with the view of lessening its power is a central partial tenotomy. This, as in all operations, should be done under strict aseptic precautions, and while the eye is under the influence of cocain. If the operation is to be bloodless, a drop or two of adrenalin chlorid solution (1 to 1000) should be instilled at the time the cocain is used. The lids having been separated sufficiently by a stop-speculum, the patient should be asked to look as far as possible in the direct opposite direction from the muscle to be operated upon, so as to expose well the field of operation. With forceps the conjunctiva alone, over the insertion of the muscle, may be raised, when a small opening should be made with a Stevens scissors. Through this opening the capsule of Tenon may be grasped and then divided. Thus the tendon of the muscle is exposed, the central fibers of which should be lifted by the forceps and then divided by means of the Stevens scissors, thus buttonholing it. While still holding the tendon up with the forceps the buttonhole may be enlarged with the scissors by cutting first in one direction and then in the other, close to the sclera, being very careful not to encroach too far toward the peripheral fibers. The forceps should now be laid aside and the Stevens hook should be inserted through the buttonhole beneath the uncut fibers, first on the one side and then on the other, by means of which the amount of resistance is determined. If this is still too great other fibers must be cut with the scissors, between the hook and the sclera, always being careful to leave a sufficient number of peripheral fibers to act as stay-cords to prevent the cut muscle from retracting too much. The strength of the uncut fibers in both directions should be equal, so that the plane of the muscle may not be changed. Both judgment and skill must be exercised, else too much or too little of the tendon may be cut. It is better to aim at leaving some of the old error uncorrected than to transform it into the opposite condition. The conjunctiva may, but the capsule of Tenon must, be divided co-extensively with the division of the tendon, to obtain the effect desired. In no kind of heterophoria should a complete tenotomy ever be done; but, if by accident it should happen, the tendon should be stitched to the sclera directly behind the original insertion, and at that distance behind determined by a correct understanding of the exact character of the error for which the operation has been undertaken.

A skilled operator will find it easy to grasp, with the forceps, conjunctiva, capsule of Tenon and tendon of muscle all at the same time, and with one snip of the scissors buttonhole all these structures and then proceed with the operation as set forth above.

If a complicating cyclophoria is to be corrected by a partial tenotomy of a rectus, not only must the tension of the muscle be altered for the correction of the main error, but its plane must be changed so as to correct the complicating cyclophoria. The kind of cyclophoria having been determined—and it is nearly always a plus cyclophoria—one is not left in doubt as to how the operation should be done. To cure a hyperphoria and a plus cyclophoria the nasal and central fibers of the superior rectus of the hyperphoric eye should be divided, while the temporal fibers should be left uncut and sufficiently strong to prevent an over-correction of the hyperphoria; or the temporal and central fibers of the inferior rectus of the cataphoric eye should be divided, leaving the nasal fibers uncut and of sufficient strength to prevent an over-correction of the error.

In a partial tenotomy for sthenic esophoria complicated with a plus cyclophoria, there being no hyperphoria, the lower and some of the central fibers of both interni should be divided, leaving the upper fibers uncut. In this way the tension of the muscle is altered, curing wholly, or in part, the esophoria, and the plane of each muscle is elevated so as to correct the plus cyclophoria. The plane of both interni having been equally elevated, there is developed, of necessity, a slight double hyperphoria, which, however, will give no trouble, being easily overcome by a pose of the head.

In operating on a case of sthenic esophoria complicated by a right hyperphoria and a plus cyclophoria, the first operation must be done on the internus of the cataphoric eye, and should consist of a complete division of the lower and central fibers, leaving uncut the upper fibers of the tendon. The threefold effect of this procedure is a correction in part, or wholly, of the esophoria, a correction of the cataphoria, and a cure of the plus cyclophoria. Whatever part of the esophoria may remain, after this operation, should be corrected by a central partial tenotomy of the right internus. Should some of the right hyperphoria remain, but no cyclophoria, a central partial tenotomy of the right superior rectus should be done; but if there should remain some uncorrected plus cyclophoria, as well as right hyperphoria, the inner and enough of the central fibers of the right superior rectus should be cut to cure these conditions. These three operations—sometimes even one or two of them—will cure a complicated case of this character.

If the esophoria is asthenic and uncomplicated, the operation of shortening should be done on one or both externi, and the plane of these muscles should be the same after, as before, the operation, otherwise a cyclophoria would be created.

If the asthenic esophoria is complicated with a right hyperphoria only, the externi should be shortened as though no complication existed, and later the hyperphoria could be treated by exercise, by a prism in position of rest for the hyperphoric eye, or by a central tenotomy of the superior rectus of the hyperphoric eye. In such a condition no muscle plane should ever be changed. The plane of a muscle should never be changed unless there is a cyclophoria to be corrected.

If the asthenic esophoria should be complicated with a plus cyclophoria alone, not only should both externi be shortened but the plane of each should be depressed so as to cure both esophoria and the plus cyclophoria. This double effect is accomplished by having the loop of the suture through the muscle near its upper margin, while the two ends are passed through the tendon near its lower margin. Tying the knot on the silver suture-plate pulls the muscle lower on the globe, thus changing its plane of action. The double cataphoria resulting will not be harmful.

If asthenic esophoria is complicated by a right hyperphoria and a plus cyclophoria, the first operation should be on the externus of the hyperphoric eye, and should be a shortening so done as, at the same time, to depress the plane of its action. The triple effect will be to cure more or less completely the esophoria, the right hyperphoria and the plus cyclophoria. If the left externus must be shortened for a remaining esophoria, whether complicated or not by a cataphoria and plus cyclophoria, one or both, for obvious reasons the plane

of this muscle should not be altered. If the plane were elevated, it would lessen the cataphoria, but would increase the plus cyclophoria; if the plane were lowered, it would decrease the plus cyclophoria, but would increase the cataphoria. After the straight-forward shortening of the externus of the cataphoric eye, whatever hyperphoria alone may exist should be treated, if sufficiently great in quantity, by a central partial tenotomy of the superior rectus of the hyperphoric eye; but if the remaining hyperphoria should be complicated with a remaining plus cyclophoria, the inner, and as much as necessary of the central, fibers of the superior rectus of the hyperphoric eye should be cut.

The operation for sthenic exophoria uncomplicated, is a central partial tenotomy of one or both externi, preferably both. The object in view being only the alteration of tension, care must be exercised that the plane of rotation shall not be changed. In operating on an externus it is far more easy to grasp, with fixation forceps, the conjunctiva, capsule of Tenon and muscle tendon, and buttonhole them with the scissors simultaneously, than it is with other muscles.

When sthenic exophoria is complicated by a hyperphoria the operation on the externi must not be done with a view of affecting the hyperphoria, hence a central partial tenotomy is indicated. Later the hyperphoria must be relieved by a central partial tenotomy of the superior rectus of the hyperphoric eye, and, if necessary, a central partial tenotomy of the inferior rectus of the cataphoric eye. The tension of these muscles should be altered without a change of plane.

In sthenic exophoria complicated by a right hyperphoria and a plus cyclophoria, the first operation should be done on the externus of the hyperphoric eye, and it should consist of a division of the upper and central fibers, leaving uncut the lower fibers. The threefold result of this operation will be: 1, relaxing the tension of the externus, lessening, if not curing, the exophoria; 2, a turning of the eye down, thus counteracting the hyperphoria; 3, torting the eye in, curing the cyclophoria. If some of the exophoria remain, whether still complicated or not by right hyperphoria and plus cyclophoria, the operation on the left externus must be a central partial tenotomy. The reason is clear: a division of the upper and central fibers would so change the muscle plane as to increase the cataphoria, although diminishing the cyclophoria; while a cutting of the lower and central fibers would so change the plane as to lessen the cataphoria but increase the plus cyclophoria. The only safe course between this Scylla and Charybdis is a central partial tenotomy of the left externus. These two operations having been done, any remaining right hyperphoria, without a plus cyclophoria, should be relieved by a central partial tenotomy of the right superior rectus; but if the remaining hyperphoria should be complicated with plus cyclophoria, the nasal and central fibers of this tendon should be cut, with the double purpose of altering the tension for the hyperphoria and changing the plane for the cyclophoria.

When sthenic exophoria is complicated by a plus cyclophoria only, the upper and central fibers of both externi (not one alone) should be cut. The triple effect of these operations is: 1, alteration of tension for the exophoria; 2, lowering the plane of both externi for the plus cyclophoria; 3, the development of a double cataphoria which, in itself, is not bad.

In asthenic exophoria uncomplicated, the tension of the externi must be increased by shortenings or advancements so done as not to change the plane of rotation. The same is true of asthenic exophoria complicated by a hyperphoria alone. Later the hyperphoria may be relieved by a central partial tenotomy of the superior rectus of the hyperphoric eye.

When an asthenic exophoria is complicated with a right hyperphoria and a plus cyclophoria, the internus of the cataphoric eye should be so shortened or advanced as to alter its tension for the exophoria, and elevate the plane for counteracting the cataphoria and curing the plus cyclophoria. If the internus of the once hyperphoric eye must be shortened or advanced to still further correct the exophoria, not any longer complicated, it must be so done as not to change its plane; and the same is true if the only remaining complication is a hyperphoria, for in counteracting the hyperphoria, a plus cyclophoria would be developed. It is also true that only the tension of the internus should be altered by a shortening or advancement when the remaining exophoria is complicated by hyperphoria and plus cyclophoria, for the reason that lowering the plane would increase the cyclophoria although lessening the hyperphoria, while elevating the plane would increase the hyperphoria although diminishing the cyclophoria. Later the hyperphoria or hypercyclophoria should be remedied by the correct operation on the superior rectus.

An asthenic exophoria complicated by a plus cyclophoria must be treated by such shortening and advancement of both interni as to alter the tension for the exophoria and elevate both planes for the plus cyclophoria. The double hyperphoria resulting would be counteracted by a pose of the head.

Cyclophoria may exist alone and may be so high in degree as to demand relief by operation. This can be accomplished by operating on both superior or both inferior recti. A plus cyclophoria uncomplicated can be relieved by dividing a few of the nasal fibers or advancing a few of the temporal fibers of both superior recti. In doing the former a double cataphoria is developed while the cyclophoria is cured; in doing the latter the cyclophoria is cured but a double hyperphoria results. Since a double cataphoria is preferable to a double hyperphoria, a division of the nasal fibers of the superior recti should always be chosen.

The plus cyclophoria can be cured by a division of the temporal fibers or an advancement of the nasal fibers of both inferior recti. The former would give a double hyperphoria while the latter would give a double cataphoria, hence, of the two, the latter should be chosen.

As to final results a division of the nasal fibers of the superior recti and an advancement of the nasal fibers of the inferior recti are precisely alike; but the former should be preferred, for it is more easily done and gives the patient much less inconvenience.

DISCUSSION ON PAPERS OF DRS. GOULD AND SAVAGE.

DR. S. D. RISLEY, Philadelphia—While I regret very much that Dr. Gould finds it necessary, under the qualifying conditions stated in his paper, to regard tenotomy of certain ocular muscles as malpractice, I find some consolation in the fact that Dr. Savage did not insist that it was malpractice to omit tenotomy. I am willing to admit that after the series of papers by Dr. Stevens, published several years ago, that the ophthalmological world ran tenotomy-mad. I heard one surgeon say that he had done more than 200 tenotomies in a single year. In one of these papers I believe we have an illustration of how the pendulum may swing too far in the opposite direction.

In 1894 in a paper I had the honor to present at Edinburgh to the International Congress, I pointed out some of the diffi-

culties that lie in the way. Attention was called to the frequent distortions to the human skull as shown in any cursory study of a hatter's forms taken as patterns from the heads of his patrons; many of which are so ill-shaped as to appear grotesque when compared with the diameters of a model skull. It is highly probable that these anomalous forms of the skull modify the form and dimensions of the bony orbit by changing the line of direction of the orbital planes. It is reasonable to suppose that during development in an anomalously shaped orbit that not only certain modifications would occur in the form of the eyeballs and in the length and line of direction of the optic nerves, but also in the origin and point of attachment, the length and direction of the ocular muscles; conditions, any one of which would lead to more or less marked disturbance of motility, and in many complex ways modify the conditions of binocular vision. In view of such considerations it is plainly obvious that any effort to reduce all the possible abnormalities of binocular vision to the simplicity of a law governing their occurrence and correction will probably result in failure. I believe, therefore, that we can not afford either in the study or management of these conditions to be dogmatic. It is my opinion that no chapter in ophthalmology is filled with more difficulties; that no subject should be approached with more critical caution than the abnormalities of binocular vision. That much harm has been done by unwisely performed tenotomies I am ready to believe; but, on the other hand, I am also sure that much suffering has been relieved and many careers rendered more hopeful by the wise aid of the skilful and cautious surgeon.

DR. M. F. WEYMANN, St. Joseph, Mo.—When a physician practices very largely in any one line, he acquires a certain amount of perfection not obtained by the average man. Thus, Dr. Savage may be able to get results above the understanding and reach of the rest. However, a measure not assimilable by the professional corps at large is a dangerous practice to advocate for general purposes, on account of the failures and actual damage in some instances that may result. Surgical interference with the muscles of the vertical plane seems to me a bad practice, although in tenotomies of the muscles of the horizontal plane I have had many nice results. Yet, even here, the complex nature of the muscular mechanism upsets often all seemingly correct and logical reasoning. A few weeks ago I operated for internal strabismus on a little girl. I decided to cut the upper fibers of the internal rectus tendon, but through some unaccountable mistake I clipped the lower portion. I was surprised to see the un-intended section produce the intended result. Likewise, I have failed when faithfully carrying out partial section according to established notions. Dr. Risley's reference to the great variability of orbital conditions also tends to show the impracticability of hard and fast rules.

DR. DUDLEY S. REYNOLDS, Louisville—There are a great many other questions to settle before proceeding to partial, or complete tenotomy in such cases. Conditions of malnutrition, state of the nervous system, habits of the individual, mode of living, age and hereditary conditions, all have to be considered. It is very important to remember what Dr. Risley has just said about physical conformation of the face and head in connection with abnormal shape of the orbit, and consequent anomalies of the orbital contents. Surely no one would expect to change the shape of the orbit by dividing the tendons of ocular muscles. Many a case of heterophoria due to anxiety and overwork, with consequent malnutrition and loss of rest has been ruined by frequent tenotomies. One recent case in my observation was operated 13 times, and the surgeon wanted to operate again, in a person with a small central scotoma in one eye. A multitude of cases of heterophoria may be cured by constitutional treatment with suitable regulation of diet, habits and mode of living. Many are cured by constitutional medication and correction of errors of refraction, without either prisms or tenotomies. Reflexes from the genito-urinary system are sometimes causes of heterophoria. I have known more than one case cured by successful operation for the cure of hemorrhoids. Many of them are due to auto-intoxication from constipation of the bowels. All these, and many more matters should be duly considered before subjecting the patient to any sort of tenotomy.

DR. J. E. COLBURN, Chicago—I must plead guilty to having performed a good many of these operations, and while I have had many occasions to regret operations I have had a great many occasions to congratulate myself and the patient upon the good results obtained. I believe with Dr. Risley that the conformation of the orbit has very much to do with the position of the eyes, their relative activity and with the production of heterophoria. I believe that errors of refraction are the cause of a great many cases of pseudo-heterophoria and also that general debility is the cause of some instances; such patients can not bear the discomforts of a muscle error with the same degree of patience they have been able to do when in a better systemic condition. I believe it is possible in a certain class of cases to accomplish many of the things Dr. Gould has referred to in his paper, but I feel that his rules must be exceedingly limited in their application. That a tenotomy, graduated or partial, is a serious operation, I am well aware, but I believe it is a justifiable procedure when done under the proper conditions. I believe in giving the patient the benefit of correcting the refraction, gymnastic exercises, etc., but that there are a certain class of cases where we must consider the patient and his inability to give us the months of time for exercises necessary to bring about the conditions which Dr. Gould says will result and that we must give such patients the relief if only for a time that comes by operation.

DR. C. H. WILLIAMS, Boston—Before we do any operations on the eye muscles, or in fact before we make a diagnosis in these complicated cases, it seems to me we need to get at all the facts of the case, as to how much muscle error there is and where it is located. I wish to call your attention for a moment to a piece of apparatus which I made last summer and which I have used for the past six months and found very helpful in this direction [exhibiting new instrument]. It consists of a hollow tin case shaped like a Geneva cross, each arm being about eighteen inches long; inside this case are a series of incandescent lights. A slot is cut in the front of each arm about half an inch wide and the length of the arm, behind which is fastened a strip of red glass. In front of this case is a wheel of wire pivoted at the intersection of the arms of the cross; this wheel carries sixteen small incandescent lights arranged in the form of a cross, to correspond to the arms of the case below. These lights are covered by having a small cylinder of tin about each lamp, and on the front of each cylinder is a number in green glass; these lights are placed on the wheel at such distances apart as would correspond to the deviation produced by a prism, when viewing the lights at a distance of twenty feet, and the number before each light gives the number of the prism which would at that distance cause a displacement of that amount. The person to be tested wears a pair of spectacles, of which one eye is filled with a red glass, and the other eye with a green glass. When testing a patient, the electric lights of the instrument are controlled by a switch so that the vertical red line and the horizontal numbers are lighted at one time, or the horizontal red line with the vertical numbers, or the vertical red line and the vertical numbers. Starting with the first combination, the vertical red line and the horizontal green numbers, the patient is asked to state where the red line seems to stand; if it comes in its true position between the 1 and 2 we know that there is no deviation of the axes of the eyes to the right or left, but if the red line seems to stand to the right (the red glass in the spectacles being before the right eye) it shows there is a convergence of the axes, and if the red line is over No. 4 it shows this deviation is equal to that produced by a prism of four degrees. If on the other hand the red line appears over No. 5 to the left, it shows there is a divergence of the axes equal to a prism of five degrees. The even numbers are to the right of the center, and the odd numbers to the left. Again, when testing a patient with the horizontal red line and the vertical green numbers showing, if he sees the red line in the center between the 1 and 2 it shows he has no

displacement of the axes up or down, but if the red line stands near the number 5 below the center it shows that the axis of that eye stands above the other equal to the displacement caused by a prism of five degrees. To show the amount of torsion, if any, the vertical red line and the vertical green numbers are lighted. If they appear superimposed, or standing parallel to each other, there is no torsion, but if the red lines and the green figures appear crossed the vertical meridians of the two eyes are not parallel, and the number of degrees which it is necessary to turn the wheel with the green figures in order to bring the red line and the green figures parallel, measures the amount of torsion. Through these spectacles the patient can only see the red lines with his right or red eye, and can only see the green figures with the left or green eye, the glasses cutting off the other rays. In this way each eye is unconsciously fixing a separate object, and if the axes of the eyes are in their proper position the red lines and green figures will seem to be in their proper place, but if there is a deviation its character and amount can be quickly and accurately measured. It is desirable to have a second pair of spectacles with the red glass in the left eye, and the green glass in the right eye; and it is essential to select the color of the spectacle glasses with care, so that the red glass will not transmit any of the green light, nor the green glass any of the red light from the lamps.

Dr. J. L. Thompson, Indianapolis—In the beginning of my thirty years' practice I paid more attention to insufficiencies of the internal muscle than to esophoria, but since I have been examining for esophoria I find that 98 out of 100 of my patients have from 1 to 3 degrees and that it seems as natural as the flexion of the hands and arms. In fact, if the patient does not have esophoria I look upon the case as an insufficiency of the internal recti muscles. I started in my practice with a great fear of operations upon the internal muscles except in cases of strabismus, where I operated freely, and it astonishes me now after twenty years to see that I have not had much over-correction in these cases. I have never operated on a case of strabismus until it has been under observation for a year, and I think in the future it will be five years before I operate on these muscle cases.

Dr. G. C. Savage, Nashville, Tenn.—Dr. Risley mentioned malformations of the skull as causative of heterophoria. There is nothing clearer than that a malformed orbit must contain an eye out of its normal relationship. The result will be one kind or another of heterophoria. In the treatment of such heterophoria, however, it is impossible to alter the shape of the orbit; therefore, if the error is to be corrected, it must be done by treatment of the muscles involved. Whatever then may be the cause of a heterophoria which is intrinsic in character, the principle of treatment remains the same. I wish to say that the instrument that Dr. Williams has very ingeniously invented will do everything that he claims for it. I do not want anybody to go from this meeting believing that I am an extremist on the muscle question, for I am not. My paper was of necessity confined to the operative treatment of heterophoria, and I am always delighted when I have a case of intrinsic heterophoria which can be cured by exercise, or by weak prisms in positions of rest. There are, however, a great many cases that can not be thus cured, and on these I always operate.

Dr. Frank Allport, Chicago—In considering the question of graduated or other tenotomies for the relief of so-called muscular asthenopia, I like not only to be honest with my patients and refrain from burdening them with unnecessary expenses, but I like also to be honest with myself. I must, therefore, ask myself the question: Do I find it necessary to perform tenotomies for asthenopia in order to secure satisfactory practical results, both to my patients and myself? A negative reply is inevitably the result of such an interrogatory. I have the average number of asthenopic patients in private and dispensary practice, and I presume I secure about the average results. At all events, in the course of a year I do not see many asthenopic patients who express much dissatisfaction from their treatment. I do not claim better results than others, and I can honestly say that I very rarely perform a tenotomy for asthenopia. Sometimes a year or so may elapse without the performance of such an operation. I therefore find it difficult to understand why some men perform this operation so frequently. I find that most of my cases do very well without tenotomies and without prisms, by a thorough correction of refractive errors and observance of the laws of health and hygiene. It may be with the unusual knowledge and skill possessed by such men as Drs. Stevens and Savage, the frequent performance of such operations may be not only useful but wise, but I am free to confess that from my own standpoint I do not feel myself capable of freely interfering with the functions of the ocular muscles. I recall the case of a gentleman operated on in Chicago who had only one eye. Through an accident his other eye was completely blinded. Some years after this accident, while suffering from asthenopia, he sought the advice of a professional muscle clipper, who, through motives which I do not attempt to analyze, performed several partial tenotomies on the good eye.

Dr. C. F. Clark, Columbus, Ohio—My experience has been very like that of the last speaker; yet I have been inclined to think of late that I have been too conservative in the matter of operations. I am willing to run the risk with being charged with radicalism when I say that within a few months a case that I had treated with muscle exercises faithfully, and for a time successfully, came to me and I found that I had kept that patient for several years with only a partial use of her eyes when she had the need for the full use of them; a very slight advancement gave me a brilliant result. By muscle exercise following the operation the abduction was carried from 18 degrees to 58 within three weeks and she had no discomfort. It convinced me that in many cases I had been guilty, as perhaps Dr. Gould has been, of being too conservative.

Dr. Hiram Woods, Baltimore—I can fully agree with Dr. Risley that if you once admit Dr. Savage's premise and then work out his conclusions you are compelled to admit that his reasoning is logical. The question with me is the premise, as given by Dr. Savage: "Heterophoria not curable by correction of refraction errors, prisms in position, or strengthening exercise." I think he should add, "provided the heterophoria is shown to be the cause of trouble still persisting." Experience has taught me that with more exact and careful methods of diagnosis the number of cases that are left for tenotomy are very small. I formerly did from ten to twenty a year, while now I do not believe I do more than one or two, and then usually for esophoria. One of the most important steps in the examination is to try to determine what the heterophoria is due to and in this connection we must not only look after the refraction and the health but into the school and home hygienic conditions. It takes a considerable amount of time to get down to these facts and possibly Dr. Thompson is right in putting it at five years. I can not go so far as Dr. Gould in saying that operation is never justifiable, for there is a class of cases in which enormous benefit results, namely, in esophoria. I do not find the high degrees of hyperphoria that some do. I have never used the instrument that Dr. Savage exhibits, but I have looked for cyclophoria persistently with the Maddox prism, as Dr. Savage taught, and found it only three or four times. In esophoria, however, with low abduction, and with the parallax displacement which Duane described, a tenotomy is often followed by the best results. I know that in my own experience a tenotomy done by Dr. Harlan of Baltimore benefited me enormously. I want to ask Dr. Gould in regard to his method of muscle exercise whether he considers the rapid development of adduction an increase in muscular strength or a development of positive relative convergence. Landolt dwells upon defective relative convergence as a cause of asthenopia. Why is it claimed that orthophoria is as bad a condition as some degrees of heterophoria? While the normal condition probably is a degree or two of esophoria for distance and three or four degrees of exophoria at the near point, as Dr. Theobald pointed out some years ago, the statement that orthophoria causes asthenopia is not in accord with my observations.

DR. L. CONNOR, Detroit—It is perfectly evident that this is a very complex problem and that some gentlemen see one part of it with greater distinctness than others. So far as my own observation goes we may seek for the cause of these muscular disturbances along perhaps three or four lines: one is a reflex occurring with certain conditions of the nose or allied organs; another is malnutrition of the eye whose muscles wobble as the muscles elsewhere do in similar conditions; a third is a physiological lack of power, and lastly there are unquestionably anatomical defects. I think it is well established that when we have settled upon an anatomical error as the cause of the trouble an operation is absolutely necessary. In other conditions the removal of the cause of irritation, etc., has certainly resulted well. It is entirely unsafe to say that anatomical conditions alone are the cause of heterophoria and that all cases should be operated upon. A friend of mine was operated on thirty-eight times within eight months and has more muscular unbalance to-day than ever before. You all know there are cases of disease of various sorts cured by operation *per se* and I am certain that many cases of heterophoria are cured simply by the cutting, and a cutting on the ear would do just as much good. I have never seen any good resulting from a partial tenotomy; I might just as well have cut the conjunctiva somewhere else. I do not mean to say the men who operate do not benefit their patients, but the good should be ascribed to its proper cause and, in some instances at least, to hypnotic influence.

DR. D. B. WYLIE, Milwaukee—The gentleman who has just had the floor touched upon a point which I think is not looked after to the extent it should be, which, in my practice at least, has appeared to be of great importance, that is, external irritation. In neither of the papers, nor in the discussion have I heard anything about correcting diseased conditions or irritated conditions of the conjunctiva. You may call these pseudo-heterophorias if you will, but they produce the same asthenopia. I have time and again seen small degrees of esophoria or exophoria disappear entirely after the cure of a very mild degree of conjunctivitis. I was somewhat surprised at one of the gentlemen stating that surgery is the despair of medicine. It seems to me that is beyond the power of any man to defend.

DR. D. M. CAMPBELL, Detroit, Mich.—The differences of opinion seem to be on the causes of heterophoria; in the treatment of the condition we are probably not so far asunder as might appear from the discussion. Most of us correct the refraction and look after the general health of the patient and cure a large number of cases, and yet in a large practice there will be a certain residual number uncured by whatever we do. In a report I made to the Michigan State Medical Society upon a study of 500 cases of asthenopia I found less than 2 per cent. that had to undergo operation.

DR. H. HARLAN, Baltimore—I envy very much the men who can have such positive convictions as to permit dogmatic statements such as we have heard. I want to ask Dr. Gould whether his statement that no case should be operated on is the swinging backward of the pendulum as the result of unsatisfactory experience in operating, or whether that has always been his opinion.

DR. GEORGE M. GOULD, Philadelphia—It is my belief that we are emphasizing entirely too much this question of muscle trouble. It may be highly scientific to do this work, but I have found many patients coming to me wearing prisms that seemed to my mind utterly unnecessary and never could have been called for. I feel it a higher duty to emphasize the importance to correct refraction, of applying the proper glasses in relation to these muscle troubles. Several misunderstandings have taken place which I wish to correct. I never said or implied that no case should be operated on. I made certain reservations and further said that this paper was written from my own experience limited to a private practice in a good class of intelligent people; I have been able to cure their symptoms or relieve them so perfectly that I have kept them as satisfied patients. I do not wish to be dogmatic because I thoroughly believe that in the matter of the practice of medicine individual genius has its own law and one man will accomplish by his method what another man could not accomplish with it.

I wish to correct a misinterpretation about "surgery being the despair of medicine." What I meant was that none of us believe in proceeding to surgical measures if we can cure our patients by medical and physiological means. We certainly despair of curing our patients naturally before we proceed to surgery. I do believe that local irritation of the conjunctiva may produce a temporary heterophoria, but on the other hand I believe these conditions are usually corrected by proper glasses which remove the heterophoria at the same time. The question has been asked why orthophoria should be considered a disease. My feeling is that in orthophoria with the Maddox rod at 20 feet there is almost always an insufficient adduction power for close work and that the trouble thus produced justifies its being considered a diseased condition.

A TABLE OF OCULAR EXTRINSIC PARALYSES.*

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In the "International Clinics," Vol. iii, Fourth Series, 1894, appeared an article by Prof. F. C. Hotz, on "The Diagnosis of Paralyses of the Ocular Muscles by the Double Image Test," which was a distinct advance in simplifying the methods of detecting the affected muscle in these perplexing cases. In studying that article, it occurred to the writer that the subject might be further simplified by exhibiting these paralyses with the position of the false image in graphic or tabular form. Soon afterward he prepared the table, which, with some modification of terms, has been used by him in teaching and in practical work since. As the table has stood the test of time and has commended itself to many practitioners and students, it is now presented for the consideration of this Section, in the hope that it may prove of value to others.

Let us consider briefly the more recent nomenclature of the movements of the eyes, mainly following that of Maddox; the muscles producing those movements, and the action of each muscle in the primary position of the eyes as well as in secondary positions.

PRIMARY POSITION.

The primary position may be stated to be that in which with the head perfectly erect, the eyes are directed toward a point upon the horizon midway between the eyes.[1]

In testing the eye muscles the primary position should be first assumed and the relations of the images formed by the two eyes studied in this position and later the relation of the images in departures from this position should be considered.

MOVEMENTS OF THE EYES.

In passing from the primary position, the eyes are capable of eight simple co-ordinate movements and, by combinations of these, all possible positions may be attained. Two of these movements, adduction and abduction, are employed in convergence and divergence; four, dextroduction, levoduction, superduction, and subduction, are employed in parallel movements; and two, extortion and intortion, are employed in rotating the eyes around their antero-posterior axis "so as to make the cornea revolve like a wheel." Because of this

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

1. While this definition is not strictly accurate for all movements of the eyes, it is sufficiently accurate for all practical purposes in making the diplopia tests.

torsion the upper segment of the cornea has been adopted empirically to represent the movements of the eye. These eight movements are produced by the twelve muscles, six for each eye as follows:

Abduction, the separation of the axes of the eyes so that the corneæ diverge, is produced by the external recti, assisted by the superior and inferior obliques.

Adduction, approximation of the axes of the eyes so that the corneæ converge, is produced by the internal recti, assisted by the superior and inferior recti.

Dextroduction, the turning of the eyes to the right, is produced by the abductors of the right eye and the adductors of the left eye.

Levoduction, the turning of the eyes to the left, is is produced by the adductors of the right eye and the abductors of the left eye.

Superduction, the turning of the eyes upward, is produced by the superior recti, assisted by the inferior obliques.

Subduction, the turning of the eyes downward, is produced by the inferior recti assisted by the superior obliques.

Extortion, the rotating of the upper segment of the cornea outward, is produced by the inferior obliques, assisted by the inferior recti.

Intortion, the rotating of the upper segment of the cornea inward, is produced by the superior obliques, assisted by the superior recti.

ACTION OF THE INDIVIDUAL EYE MUSCLES.

Each of the six muscles of the eye has one movement for which it is particularly responsible: The external rectus for abduction; the internal rectus for adduction; the superior rectus for superduction; the inferior rectus for subduction; the superior oblique for intortion, and the inferior oblique for extortion. This action of each muscle may be called its primary action, but each has other actions varying according to the position of the eyes when the action occurs, which may be called secondary. The external rectus and the internal rectus have no secondary action when moving in the horizontal line, but in all other positions they have secondary actions. All the other muscles have secondary actions in all positions. Usually the movements of the eyes in straight lines from the primary position are all that are necessary to be considered in making diplopia tests for ocular paralyses; but in certain complex cases it is desirable to study the motions of the eyes in all possible positions. The limits of this paper will not, however, permit a review of the action of each muscle in all positions.

If we keep in mind the origin and insertion of these various muscles it will assist us greatly in remembering their actions. The external and internal recti passing horizontally from origins which are to the inner side of and behind the eyeball to insertions on the horizontal meridian of the anterior segment of the globe, act. when the eye is in the horizontal plane, to simply rotate the eye to the right and left. In the upper plane each acts as a superductor and intortor, in the lower plane as a subductor and extortor.

The superior rectus from an origin which is to the inner side of and behind, passes diagonally to its insertion in the upper anterior segment of the globe near the vertical meridian. Having this diagonal position the muscle even in the primary position not only superducts the eye, but it also adducts and intorts it.

The inferior rectus having a similar origin, direction and insertion in the anterior inferior portion of the globe, primarily subducts the eye, but at the same time adducts and extorts it.

The superior oblique from a potential origin to the inner side and in front of the eye, passes diagonally to its insertion in the upper outer part of the posterior segment of the globe and in the primary position, not only intorts but also subducts and abducts.

The inferior oblique having a similar origin, direction and insertion in the outer lower part of the posterior segment extorts and also superducts and abducts.

It is thus seen that all the recti except the external adduct; that the obliques abduct; that the superior muscles, obliques and recti, intort; that the inferior muscles, obliques and recti, extort; that the superior recti and inferior obliques superduct and that the inferior recti and superior obliques subduct.

For the maintenance of binocular single vision all these muscles must act with the greatest precision and harmony, so that the rays of light coming from an object shall fall upon similar portions of the retina in each eye. If one muscle is weakened in the slightest degree the eye is not held in the proper position but rotates slightly in a direction opposite to the action of the affected muscle and rays of light falling upon a different portion of the retina from that in the other eye, the object is seen double, that is, diplopia occurs.

PROJECTION.

Observation and education have taught us when looking at an object, that is, when the eyes are so directed that rays of light coming from that object fall upon the macula, that another object so situated that rays of light coming from it fall to the left of the macula is to the right of the object viewed, and that rays of light falling below the macula come from an object above the object viewed. In the normal position of the eyes when both are accurately fixed, rays coming from the object viewed fall upon corresponding parts of the maculæ and rays coming from the right pass over to corresponding points to the left in each retina and are interpreted to the consciousness as being to the right. When, however, one eye deviates, say to the right, it is so turned that rays fall further to the right on the retina than they would if there was no deviation, and by education are interpreted by the brain, as being further to the left than they actually are. And as for all other directions, so that we find when one eye deviates from its fellow, the image of the deviating eye is always projected in a direction opposite to that in which the eye turns. It was shown above:

1. That when a muscle is weakened, the other muscles turn the eye in a direction opposite to the action of the affected muscle. 2. That projection of the false image is always in a direction opposite to the turning of the deviating eye. And from these two facts a third is apparent that is of great assistance in detecting the affected muscle, namely,

3. That the false image always appears to be displaced in the direction of the action of the affected muscle.

4. Another point of importance is the fact that the distance between the images increases when the eyes are turned in a direction calling for the action of the affected muscle, and diminished when the eyes are turned in the opposite direction.

VARIETIES OF DIPLOPIA.

According to the relative positions of the images, diplopia is classified as lateral when the images are disposed approximately horizontally and as vertical when

they are disposed approximately perpendicularly. Very rarely the displacement is about midway between horizontal and vertical; but with these rare exceptions there is no difficulty in placing the diplopia in one or the other class. These two varieties of diplopia are further subdivided according as the false image is displaced toward the temple or toward the nose. In horizontal displacements of the eye it is manifest that the false image must be displaced toward the temple or toward the nose. But in vertical displacements, owing to the fact that all the superductors and subductors are also either abductors or adductors, there is always lateral displacement and thus the false image is also projected either toward the temple or toward the nose.[2] If the images are separated so that the image of the right eye is seen on the right side and that of the left eye on the left side, the diplopia is homonymous or temporal; but if the images are crossed so that the image of the right appears to be to the left of that of the left eye the diplopia is hetoronymous, crossed or nasal. The writer much prefers the simple English terms, temporal and nasal to indicate the position of the false image, but as these have not been generally adopted the more usual homonymous and crossed are used in the table and in this paper.

Having in mind the foregoing facts, the muscle affected is readily determined. In making the tests the patient should be so placed that the eyes in the primary position are directed toward a small bright light, as a candle flame, 20 feet away. A red or green glass should be placed before one eye. This glass serves a double purpose. It makes the separate images more apparent, and it shows which image belongs to the right eye and which to the left. If now the patient sees two images of the flame, we inquire at once whether the images are side by side or one above the other. If the former, lateral diplopia, is found eight of the twelve muscles are at once excluded and we know that one of the four lateral recti muscles is involved. Knowing whether the diplopia is homonymous or crossed, the number of muscles involved is reduced to two, and then by directing the patient to turn the head to the left so that the eyes are dextroducted, or the head to the right so that the eyes are levoducted, we bring the analysis down to a single muscle and can say at once which one of the four lateral recti is involved. Suppose, for instance, that the patient says that the image of the right eye is to the right of the other and that it passes farther from it as the head is turned to the left, eyes dextroducted, we know at once that it is one of the four laterals, because the diplopia is lateral; that it is one of the externi because it is homonymous and that it is the right externus because the images separate when the eyes are turned to the right calling this muscle into action.

If, however, the diplopia is vertical, we know at once that one of the eight vertical muscles is involved. If while vertical, it is homonymous, it is shown that one of the four obliques is involved. In either of these cases if diplopia is present in the upper field, that is in superduction, we know that it is one of the muscles that turns the eye up, while if present in the lower field, we know that it is one of the subductors. Having in this way reduced the quest to one of two muscles, the position of the images shows which of these two is affected. Thus if we have with the eyes turned upward the image of the right eye above and to the right of that of the left eye, the right inferior oblique is at once shown to be the one paralyzed.

A TABLE OF OCULAR PARALYSES.

- Diplopia
  - Lateral. 4 — External or Internal Recti
    - Homonymous. Externi.
      - 1. Images separating in Dextroduction. Rt. External Rectus.
      - 2. " " " Levoduction. L. " "
    - Crossed. Interni.
      - 3. " " " Levoduction. Rt. Internal "
      - 4. " " " Dextroduction. L. " "
  - Vertical 8 — Superior or Inferior Recti or Obliques
    - Homonymous. Obliques. 4
      - In Superduction Inferior
        - 5. Right Image Higher. Rt. Inferior Oblique. /
        - 6. Left " " L. " " \
      - In Subduction Superior
        - 7. Right " Lower. Rt. Superior " \
        - 8. Left " " L. " " /
    - Crossed. Recti. 4
      - In Superduction Superior
        - 9. Right " Higher. L. " Rectus /
        - 10. Left " " Rt. " " \
      - In Subduction Inferior
        - 11. Right " Lower. L. Inferior " \
        - 12. Left " " Rt. " " /

Persistent diplopia indicates paralysis or paresis of one or more of the ocular muscles.[3]

1. When a muscle is paralyzed the eye turns away from the action of that muscle.

2. Projection is in the opposite direction to the deviation of the eye.

3. Projection is in the direction of the action of the affected muscle.

4. The images separate in turning the eyes in such a direction as to call for the action of the affected muscle.

DISCUSSION.

DR. F. C. HOTZ, Chicago—Several years ago I worked out a similar scheme for facilitating the diagnosis of ocular paralyses by the diplopia test. My plan was based upon the fact that we can group the six ocular muscles into three pairs, each of which controls one of the three principal rotations of the eye: the first pair (internus and externus) controls the lateral movements; the second pair (superior rectus and inferior oblique) the upward movements, and the third pair (inferior rectus and superior oblique) the downward movements. In any case of paralysis, therefore, the first question to be settled is this: The kind of diplopia locates the disturbance upon which pair of muscles? Lateral diplopia indicates an affection of the first pair; vertical diplopia in the upper field points to the second pair; and vertical diplopia in the lower field to the third pair. The next step is to decide which muscle of the pair is affected. This question is at once answered by the homonymous or crossed character of the diplopia. Homonymous diplopia of the first

2. In vertical diplopia in a patient with previous esophoria or exophoria the images might be exactly vertical (the author has seen one such case), but these exceptions to the rule must be exceedingly rare.

3. Exceptions: Injuries, diseases and tumors of the orbit causing displacement and loss of motion, usually obvious; and chronic spasms of the muscles of the eye, so rare as to be negligible

pair points to the externus; crossed diplopia to the internus; homonymous diplopia of the second pair points to the inferior oblique; crossed diplopia to the superior rectus; homonymous diplopia of the third pair points to the superior oblique, and crossed diplopia to the inferior rectus.

The affected muscle being found it only remains to determine whether it is the muscle of the right or left eye. This last question is answered by the well-known fact that the image of the affected eye is projected in the direction of the normal action of the paralyzed muscle; and that the distance between the double images increases in this direction and diminishes in the opposite. If, for instance, we have found a paralysis of the externus and the images separate when the eyes are rotated to the left, but come together when the eyes are rotated in the opposite direction, we know at once the paralyzed muscle must be the externus of the left eye.

I have taught this method a number of years and always found the quick and easy way of making a correct diagnosis was a great revelation to the students who are accustomed to look upon the paralyses of ocular muscles as one of the most difficult and perplexing problems. Dr. Starkey has elaborated a similar method and I am pleased to learn that he too has been successful and well satisfied. It shows that students may readily understand the clinical pictures of ocular paralyses if they are presented to them in a comprehensive manner.

DR. W. H. WILDER, Chicago—Dr. Starkey's table will be a valuable addition to the class room. It is certainly difficult to get students to comprehend this matter of ocular paralysis and any way of simplifying it is of value. The only suggestion I would make would be that this table might be supplemented by a diagram giving the evidences of tortion or tilting of images that we see when certain straight muscles or the obliques are paralyzed. I do not agree with Dr. Hotz on this point. If you have an affection of one of the straight muscles it is easily recognized without taking the patient into the dark room, but the difficulties come with the partial paralyses or pareses, where the degree of diplopia is not great and the difficulties are worse when a group of muscles are affected. It is not an easy matter to work these cases out to a satisfactory conclusion.

DR. M. F. WEYMANN, St. Joseph, Mo.—The subject of the diagnosis of paralysis affecting a single muscle of the eye may be reduced to three mechanical rules whose application requires little thought and analysis: 1. Diplopia appears in the direction of the action of the affected muscle. 2. The faulty image is always in advance; this is reversed only when the paretic eye is used for fixation. The first two rules determine easily any paresis in the horizontal plane. 3. Of the muscles acting in the vertical sense, the obliques produce homonymous, the recti heteronymous diplopia.

DR. EDWARD JACKSON, Denver—I think it is extremely important for practical reasons not to attempt to burden the mind with any such table, but to follow a plan similar to that indicated by the last speaker. It is well enough to have such a table for reference, but I think for practical work we have the whole theory of the subject in the rules Dr. Weymann has given. The diagnosis of partial paralyses in a large majority of cases is not rendered simpler by such a scheme, and I find that they can not be settled in a few minutes or even in an hour by repeated tests. You must remember that no ocular movement is dependent upon any one muscle and no movement is lost by the paralysis of a single muscle, unless it be direct lateral movements of a certain nature. I think the measure having the greatest value as a final test is the accurate measurement of the fields of binocular fixation.

DR. HORACE M. STARKEY, in reply—If I understand Dr. Hotz, this paper illustrates his method of teaching to-day as well as that of ten years ago. The object of my study has been to make the teaching of this rather complex subject as simple as possible, and certainly it has been much more easily understood by physicians and students, when explained in connection with this table, than by any other means that I have been able to devise. It is not expected that the table will be memorized, but rather to be at hand for ready reference. The reason that no supplementary table was added, as suggested by Dr. Wilder, is because it seemed to me that the simpler the table could be made the more valuable it would be.

MULES' OPERATION.*

FRANK C. TODD, M.D.

Clinical Professor of Ophthalmology and Otology, University of Minnesota; Attending Eye and Ear Surgeon to City and Asbury Hospitals.

MINNEAPOLIS, MINN.

The operation of evisceration was devised by Graefe in 1884, his object being to prevent death from meningitis following removal of suppurating globes; and by Mules of Manchester, England, at about the same time, his object being to prevent sympathetic ophthalmitis which occasionally follows enucleation. Since which time this operation has been urged by some surgeons as furnishing a more suitable stump for prothesis.

In 1885 Mr. Mules devised and executed the operation which bears his name. This consists in ordinary evisceration, including ablation of the cornea and the insertion of an artificial vitreous.

In 1886 Mr. Adams Frost of London practiced the insertion of a glass ball immediately after enucleation; his method was as follows: After incising the conjunctiva all around the cornea the tendons of the recti were secured by sutures, then enucleation followed with the insertion of the globe, after which the sutured tendons were fastened and the conjunctival flaps brought together.

Mr. Lang of Moorfields shortly afterwards modified this operation by inserting the artificial globe into Tenon's capsule.

In 1895 Dr. Fox of Philadelphia devised the operation of inserting an artificial globe into an orbit where the eyeball had previously been enucleated. His operation consists in opening the conjunctiva horizontally, dissecting a hole in the orbital tissues into which the globe is inserted, the tissues then being sutured over the ball. Dr. Fox records a success of 85 per cent. in 48 operations. Simple evisceration in the opinion of most surgeons presents no advantages over enucleation. It does not, at any rate, after a few months, make a better stump than results from a careful enucleation. In those cases where Mules' operation can not be performed, the Frost-Lang operation may be substituted. The Fox operation is a very ingenious one and certainly causes a great improvement in the appearance of appropriate cases, but it is probable that this operation will not be very generally adopted, since the reform Snellen eye has been invented and is giving such satisfaction. Many of the members of this Section have used the reform eyes, no doubt, and will give us the benefit of their experience. There are two forms made, of which I show some samples. In both of them the back is filled in, but in one it is filled in more than in the other. (Figs. 2 and 3.) They are certainly a great improvement over the old form. The large cavity which results from enucleation is partially filled in and does away, in part at least, with the collection of mucus, besides giving far better results from a cosmetic standpoint. Recently I received a letter from Dr. de Schweinitz, in which he says that by the use of the reform eye in cases where he has recently performed enucleation according to the improved

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann

technic, i. e., suturing the tendons; he has had as good results as after Mules' operation, though he states that he still performs the latter operation in selected cases. We certainly have much to thank Dr. Snellen for in giving us this great improvement, and it only seems strange that some one did not devise such an artificial eye before.* There are many cases in which the Snellen eye will be of great benefit, but I do not believe that it can ever take the place of Mules' operation where the latter can be performed, because there are at least the following advantages of the latter operation over improved enucleation with the insertion of the reform eye.

FIG. 1.

FIG. 2.

FIG. 3.

Fig. 1.—The original hollow artificial eye, or eye-shell, for cases of atrophic eye ball, and after Mules' operation. Fig. 2.—A double-walled shell for cases where a smaller stump remains, as after a simple evisceration. Fig. 3.—An artificial eye-globe, where the conjunctival sac is emptied and spacious.

MULES' OPERATION.	ENUCLEATION WITH SUTURING TENDONS AND INSERTING REFORM EYE.
1. Growth of orbits uniform.	1. Growth of orbits not uniform.
2. Mobility.	2. Mobility less and will decrease in time as is the case following simple evisceration.
3. Orbit entirely filled in.	3. Orbit only partially filled in.

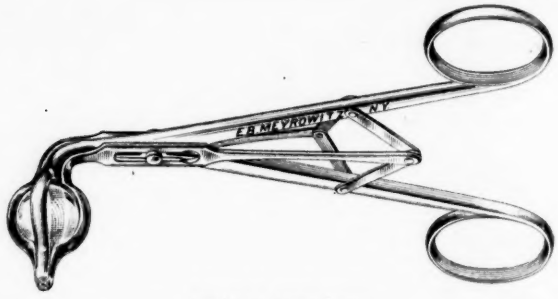
As yet the use of the reform eye has not been sufficient to enable us to make further comparison.

I shall mainly give you my own experience with Mules' operation and conclusions derived therefrom. If you desire a more full treatise upon this subject and also regarding other substitutes for enucleation, I refer you to the papers read before the Section of Ophthalmology of the Thirteenth International Congress of Medicine at

Mules' Glass Spheres.

Paris, and particularly to the excellent paper read at that meeting by De Schweinitz, summarizing the opinions of 67 American surgeons who had given their experience with substitutes for enucleation, 32 of whom had performed Mules' operation. It is worthy of note that those who have performed a number of these operations have had a large percentage of successes and are enthusiastic in their commendation, while many who have performed but few and had a larger percentage of failures do not consider the operation advisable. The great discrepancy in the results of the various operators surely indicates a difference in technic and I believe that statistics gathered a few years hence will show a greater percentage of successes and a larger number of operators who will agree with those of larger experience, notably Fox, Buller and Allport, who are strongly in favor of the operation. In England we find enthusiasts in Carter, Bickerton and others, who have performed the operation for many years. Swanzy says in his last edition of "Diseases of the Eye," regarding Mules' operation:

"This proceeding—a modification of the foregoing—was also proposed by Mr. Mules for cases of threatened sympathetic ophthalmitis, and, like simple evisceration, has not yet met with universal acceptance in those cases, because many fear that it does not afford sufficient protection against sympathetic ophthalmitis. I do not participate in this feeling. In cases of staphyloma, however, and in some other conditions where the questions of sympathetic ophthalmitis in the other eye, or of a new growth in the eye to be operated on, do not enter into consideration, no proceeding is, in my opinion, more satisfactory, at least in young persons, than this beautiful one of Mules'. The prothesis it gives is almost perfect



Author's Introducer.

"The danger that the glass sphere may get broken by a blow upon the eye has been put forward as an objection to this method. No doubt it is an accident which may occur, and would then necessitate the enucleation of the eye, but no case of the kind has as yet been recorded, although the operation has been in use for fifteen years. Silver spheres, instead of those of glass, have been sometimes employed to obviate the danger referred to.

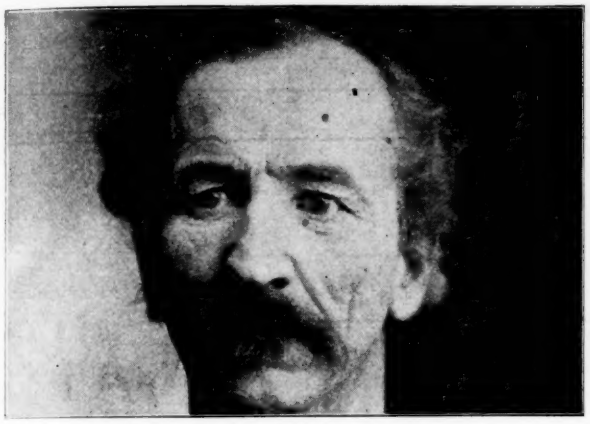
"I can heartily recommend this procedure. I use it frequently, and I am much pleased with it, for, with a well-fitting glass eye, the cosmetic result it gives is infinitely better than that produced either by complete enucleation or by evisceration of the eyeball."

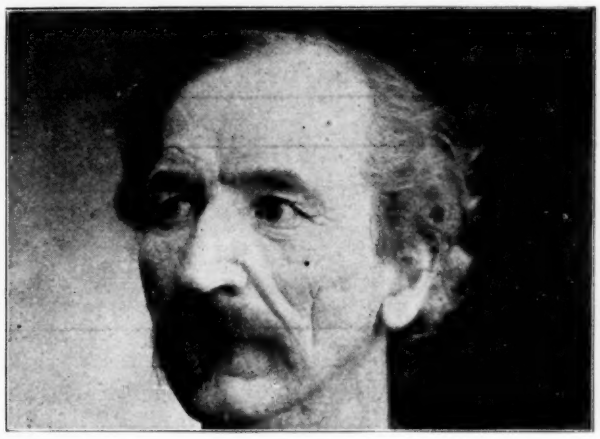
De Schweinitz speaks very highly of Mules' operation and states in conclusion that "the best cosmetic results among the substitutes for enucleation, if successful abscission be excluded, are secured by Mules' operation which is only positively contraindicated by malignant disease, sympathetic ophthalmitis, extensive laceration of the sclera, and extreme phthisis bulbi." Yet he states finally: "Mules' operation, when successful, certainly furnishes admirable results, but I feel sure that although at the present time, from the cosmetic standpoint, it seems to be one of the best of the substitutes for enucleation it is not likely to endure as an operative measure, unless the percentage of failures is greatly reduced." There can be no doubt that this percentage of failures can and will be reduced.

The number of cases upon which I have performed Mules' operation are 31; these include two cases of Dr.

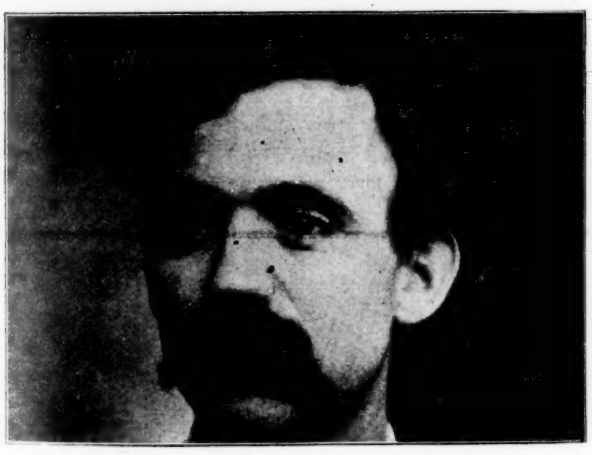
* Since reading this paper I have discovered an article published in the Ophthalmic Record, May, 1901, which states that the closed artificial eye was devised by J. L. Borsch, in 1894.

Allport (whom I assisted) which I have had an opportunity to follow out, also another case of Dr. Means of Columbus, whom I assisted in his first Mules' operation in 1899. All of these cases are either under my personal observation or I have recently heard from them by correspondence. Two were operated five years ago, and the others during the past four years and up to the present time. All of these patients are still retaining the globe excepting two in which the ball escaped, and the case of Dr. Means, in which the glass ball was removed eighteen months after insertion by another surgeon. These three cases are given in detail later.





Age at Operation.—The youngest person operated was one year old, and as the child had an extra large scleral cavity, having lost the eye from ophthalmia neonatorum followed by staphyloma, a good-sized glass ball was inserted in order to better assist in maintaining uniform growth of the two orbits. This child is here and I show the case to demonstrate the uniformity of orbital development. The oldest was 54 years. The only reason for not inserting a globe in old people has been the fact that



the cosmetic improvement has not been as important as in young people. The other cases ranged in age from 4 to 45 years.

Time in Hospital.—Regarding the time in the hospital, while at first I kept them in two weeks I now keep them only one week. I do not consider it essential to keep the patient in bed but a few days, and simply advise him not to use his good eye for reading and not to exercise to any extent for two weeks, though I keep the patient under observation for two weeks and prefer to see him one month. The prothesis was inserted in some cases two weeks after the operation, but in many cases it was thought best to wait a month, and in one case two months, before allowing the patient to continually wear the glass eye. Regarding the material used as an artificial vitreous I have used glass in all my cases. Fox sums up this point as follows: "I prefer first glass balls, then gold balls. Silver balls produce argyria and undergo oxidation. Aluminum globes become disintegrated, as was shown in one case where I used a perforated aluminum sphere as suggested by Dr. Bryant. This caused great pain, because the tissues surrounding it grew through the opening."

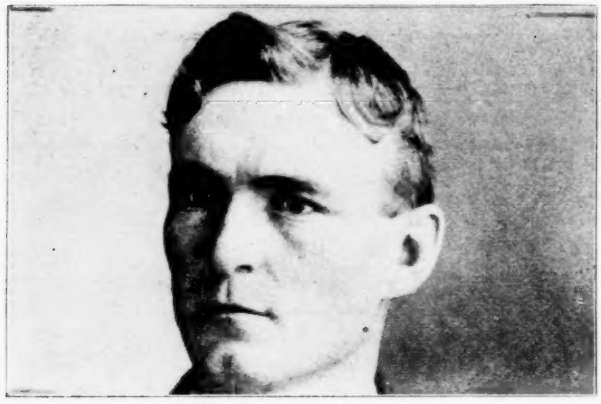
Contra-indications.—As absolute contra-indications I would consider malignant intra-ocular growths and diseased or injured eyes which have already excited sympathetic ophthalmitis; extreme phthisis bulbi and sclera so lacerated that it could not be made to retain an artificial vitreous. (Frost-Lang operation may be substituted in the two latter classes.)

I have had no experience in performing Mules' operation where sympathetic ophthalmitis was present and have not cared to be a pioneer in the experiment, though I could not have had worse results than I have had following enucleation in these cases, for in the few cases I have had, enucleation failed to permanently arrest the disease, and in two cases at least total blindness ultimately resulted. Old diseased eyes, traumatic or non-traumatic, in which iridocyclitis is present and which are said to be most apt sooner or later to cause sympathetic ophthalmitis, even when sympathetic irritation is present, I do not consider contra-indications and have on my records 7 such cases; in all these cases there has been a complete and immediate subsidence of the sympathetic irritation and no return. Three years ago, however, I enucleated such an eye because the patient considered

the time element more important than cosmetics and he has since had attacks of sympathetic ophthalmitis. Had I inserted an artificial vitreous in this case I probably would have considered the operation at fault. It was simply a case in which enucleation failed to arrest a developing sympathetic ophthalmitis.

Phthisis bulbi if not extreme need not prevent the insertion of a glass globe within the sclera. Case 28 was one of phthisis bulbi. A small globe was inserted into the scleral cavity. Glaucoma is not a contra-indication if we may judge from the success attained in Case 2.

Neither do I consider suppuration of the globe a con-



tra-indication, for in all such cases the results have been highly satisfactory and suppuration has ceased with the operation. I have had four such cases, of which the worst was that of J. T. M., male, age 28, machinist. A piece of brass entered the vitreous. Mules' operation was performed ten days after the injury, the vitreous chamber was full of pus, but the tissues healed as readily as any case. The fact that the presence of tuberculosis of the iris is not necessarily a contra-indication if limited to the iris is evident from the record of Case 1. In this case Dr. Allport had performed an iridectomy for tuberculosis of the iris, and upon recurrence Mules'

operation was performed. Gunshot wounds are not contra-indications unless the sclera is too much lacerated or shot is present in the orbit and causing irritation. I have had only one such case, and in this the shot had passed completely through the ball and become embedded in the bone. Mules' operation was performed with success.

Failures would include escape of artificial globe, the development of sympathetic inflammation and a stump over which an artificial eye can not be worn because of its irritability.

Sympathetic Inflammation.—No opinion is more valuable on this point than that of De Schweinitz, who concludes after his thorough investigation of 317 operations by 32 operators, as follows: "Eyes so wounded that they are likely to excite sympathetic ophthalmitis if seen before two weeks have elapsed need not be enucleated, that is, evisceration or Mules' operation may be performed, because, *with perhaps the exception of a single case, there is no positive proof that those operations have of themselves excited sympathetic disease. They may fail to arrest the development of sympathetic ophthalmitis, just as enucleation may meet with a similar failure.*" (Italics mine.)

Dr. de Schweinitz reports painful stump requiring removal three times. The only case in which I have had

this experience is the one of Dr. Means, whom I assisted two years ago while in Columbus.

J. R., male, 22, left eye blind and at times some pain. Right eye in good condition. Mules' operation performed as usual, no reaction, recovery uneventful. From time to time Dr. Means wrote that the patient, who was away at college, complained of inability to wear an artificial eye, and at my suggestion the Doctor removed some of the stitches which he thought might be causing the irritation. May 17, Dr. Means writes in reply to my letter as follows:

"The patient you refer to has had the glass ball removed. He came to me last December and I removed another stitch that was deeply embedded in the upper fornix. I thought

probably this was causing the irritation. He returned to college, and claimed that his eye did not improve. I received a letter from him later stating that the other eye was becoming irritated. I wrote him to come to me at once, but received a letter from an oculist in his college town, saying that he had removed the glass ball to relieve irritation. He simply removed the ball and allowed the sclera to remain. The Doctor intimated that the ball was too large, and therefore made undue pressure. I have operated on only one case since, and it has proven an entire success."

I am not prepared to explain this case, but do remember that we used a ball which was quite tight and

think the explanation of the surgeon who removed the globe quite probable.

Escapes are due to the following causes: reaction, hemorrhage, sepsis and consequent sloughing of edges of the sclera, imperfect ball, too large ball, too small ball, improper coaptation of sclera, use of absorbable sutures, insufficient number of sutures, too early wearing of prothesis, and later sepsis introduced by means of the prothesis or otherwise, resulting in abscess.

Reaction.—Those of greatest experience at first had a great deal of inflammatory reaction following their operation, and Fox attributes many of his early "escapes" to this cause. In the 317 cases tabulated De Schweinitz reports excessive reaction 77 times. The only case in which I have experienced any greater reaction than following enucleation are in Cases 1 and 2; only one of these could be called excessive. These I attribute to the fact that just before inserting the globe the cavity was dried out with iodoform gauze, enough of the powder remaining to cause the inflammatory reaction, and I believe a common cause of reaction is the use of irritating antiseptics. I have found very hot sterile water of the most service, because it acts as an antiseptic, is non-irritating and effectually stops hemorrhage, which may in itself be a cause of expulsion.

Moist dressings are undesirable because they promote suppuration, and a dry, sterile or non-irritating antiseptic dressing with a pressure bandage will aid in preventing reaction. This bandage should not be removed before two or four days have elapsed, unless complications arise, and the good eye need not be bandaged at all though the patient should be cautioned to keep it quiet.

While an irritating antiseptic should be avoided as much as possible, and if used it should be followed by irrigation with hot sterile water, yet a condition of asepsis is important and the balls should be sterilized in boiling water, and before inserting should be examined to discover any small hole through which the water may have entered. Occasionally such imperfect glass globes will be discovered.

The ball inserted should be as large as the scleral cavity will admit and yet small enough so that the edges of the sclera will not be pulled apart during the healing process. Case 15, already spoken of as being the only case in which there was an escape, I believe is an example of the use of a too small ball.

Laura D., aged 4, consulted Oct. 31, 1899. Dirty wire cut left eye yesterday while at play. Find large wound across cornea with escape of contents of the globe and evidence of infection. Operation delayed till November 2, awaiting consent of mother. November 2, performed Mules' operation as usual, the only difference being that a globe was inserted smaller than the cavity would have admitted comfortably, because I had on hand no globes of medium size and could not obtain one in the city. There was no reaction and result was successful. An eye was adjusted (date not recorded) and patient returned to her home one hundred miles away. A letter was received Feb. 21, 1900, stating that on February 11 the operated eye began to "look sore," and for the next two days "she had a good deal of pain." After which there was relief, but the glass ball became visible, and February 20 it came out (three months and eighteen days after operation). My opinion of this case is that the ball being too small to become firmly encysted was movable in its cavity and acted as an irritant.

The sclerotic coat is so non-vascular that union does not quickly take place, and hence the importance of careful coaptation of the cut edges and the necessity of using many strong, non-absorbable sutures. These become encysted and do not often cause irritation, but if they should the conjunctiva can be opened and the irritating sutures removed after firm union has taken place. Occasionally it has been found necessary to suture the conjunctiva during convalescence because it had separated.

As a rule, it is best to wait a month before inserting a prothesis for permanent use, and when first used, the patient should be seen daily to ascertain the effects. The irritation produced might be sufficient to cause the recently united scleral edges to part. If this seems imminent, it may be necessary to wait a week longer, when the artificial eye may be tried again. If the sclera separates, it should be reunited with sutures as before. In my experience this has never happened.

The second case in which there was an escape of the glass ball was that of W. M., whose eye was operated upon May 28, 1898. It was an old case of recurrent iridocyclitis with sympathetic irritation. The original trouble had been gonorrheal ophthalmitis, which had occurred two and one-half years previous to the time Mules' operation was performed. The results of the operation were successful and the patient had no trouble of any consequence until May 18, 1901. While doing the ordinary work on a farm and wearing the prothesis, not taking pains to keep the prothesis clean, the tissues became infected and the result was that when he reached the city four days later I found the glass ball protruding and an abscess of the orbit present. Pus was found in the orbital tissues and in the sclera back of the glass ball. The glass ball was removed and the cavity irrigated daily. The stump is now quite healed. The escape in this case was clearly due to sepsis introduced on account of the carelessness on the part of the patient, who was constitutionally unclean.

I have always found great difficulty in securing a proper fitting glass eye to cover the stump after Mules' operation. After a successful operation the only thing required to secure perfect appearance is a well-fitting eye of the correct shade, and hence one feels like being very particular in the selection. Most of the eyes now on the market are not fitted to be used for these cases. To fit well and give the best results the iris should be placed well up and not far toward the internal side, leaving a broad white margin below while the temporal side of the eye should not be as large as the usual prothesis; an extreme convexity is undesirable as such eyes appear too prominent when in place. The customary notch should be very slight, or may be absent.

In conclusion, I wish to state that I believe Mules' operation has come to stay and that as time goes on the percentage of failures will decrease and it will be more universally performed. The following are the advantages:

1. Absence of tears and secretion.
2. Development of orbit maintained.
3. Absence of enophthalmus.
4. Moisture of prothesis maintained.
5. Mobility.
6. In general the satisfaction to the patient, because of natural appearance and consequent absence of self-consciousness, which is bound to make a vast difference in the success and happiness of the individual.

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DISCUSSION.

DR. FRANK ALLPORT, Chicago—Failures in this operation are more or less frequent from the ambitious desire to fill in the scleral sac to its utmost capacity, in order to provide a large stump upon which to place the artificial shell. Considerable reaction and swelling usually follow the operation, and if the ball is too large, stitches are liable to pull out and expulsion of the ball will follow. An important point in this operation is the use of plenty of scleral sutures. Some operators make a rule to insert three, four or five sutures. I use as many as the incised sclera will hold, and place them well back in the scleral tissue. I found it useful to follow the suggestion of Dr. Prince, of Springfield, in swabbing out the interior of the scleral sac with a 95 per cent. solution of carbolic acid just before inserting the globe, and neutralizing the acid immediately with alcohol. It certainly adds to the safety of the operation by rendering the interior of the sclera as aseptic as possible. I insert my conjunctival sutures very far back in the conjunctival tissue, as I was very much annoyed by the conjunctival sutures pulling out and leaving a central opening in the conjunctiva, thus exposing the scleral sutures. In my last few cases I have placed the sutures as far back in the conjunctiva and underlying tissue as was practically possible, and I have not since been annoyed by the unpleasant and unfortunate gaping of the edges. I always wait until hemorrhage has practically ceased before inserting the glass globe. Some operators pay little attention to this point, but the hemorrhage following the curetting of the sclera is usually excessive and while the wait is tedious, I believe it better to endure it than to be in too great haste to insert the globe. The hemorrhage can be controlled to a certain extent by the use of very hot bichlorid solutions and packings with iodoform gauze. I do not like aluminum globes, because I saw one case in the practice of a colleague in Chicago where the globe greatly disintegrated and had to be cut away with considerable disfigurement to the orbit. Up to the present time I have had unvarying success in my Mules' operations, but I am sorry to say that I have to report my first failure. It was a case in which I found a calcareous lens and orbit. When I inserted the scleral sutures in this case, I noticed that the tissue was fragile, and I should have had better judgment than to have gone ahead with the operation, but never having had an experience with an eye of this kind, I completed the operation. I subsequently lost this ball, and had to treat the case as an ordinary evisceration. I think this case should teach us the lesson never to make a Mules operation in a calcareous eye, for I believe that in such cases we will always find the sclera incapable of standing the necessary pressure.

DR. MELVILLE BLACK, Denver—Concerning the use of Snellen's eyes I believe that with their use this operation in the future will not be so frequently performed. In my experience with the Snellen eye, covering a period of two years, it has been so satisfactory that I have abandoned the Mules operation entirely and have had just as good cosmetic effects as with the implantation of the glass ball. We secure by the use of this shell all that the Mules operation can give us without the long delayed healing process, together with the fact that a large percentage of these people are unable to spend the time necessary to secure a good cosmetic result.

DR. H. FRIEDENWALD, Baltimore—I should like to make the statement that insertion of the glass globe after enucleation does not prolong the period of healing; it may after the Mules operation. I have not had experience with that. I have had only one case in which the ball came out and in that case I had used a gold one. In my short experience with the Snellen eye I am inclined to think we shall probably do these operations more rarely than we used to.

DR. H. MOULTON, Fort Smith, Ark.—One of the arguments advanced for the Mules operation is that the orbit, in the case of children, develops symmetrically with the orbit of the other eye. I have observed a number of cases in which the globe had atrophied in childhood and in every one of them the development of the orbit was very insufficient and in some the growth seemed to have absolutely ceased at the time the atrophy took place. I have wondered why operators should expect that the orbit would develop more after the Mules operation than in these atrophy cases, and I would like to ask if operators are satisfied that they have observed in practice such a development of the orbit as they expected after the Mules operation.

DR. F. C. TODD, in reply—In regard to the development of the orbit my experience has not been long enough to observe it in many cases. One of the cases just shown demonstrates the uniform development of the orbits. In that one, however, there was a large anterior staphyloma and I was able to insert a large ball, which must certainly assist in the development of the orbit. This was the one operated when one year old.

THE TREATMENT OF THE ACUTE PSYCHOSES IN PRIVATE PRACTICE.*

C. EUGENE RIGGS, A.M., M.D.
ST. PAUL, MINN.

The various forms of mental perversion usually first come under the observation of the general practitioner. As for the acute insanities, their prognosis varies in proportion to their early recognition and treatment. Skilful attention at the outset will frequently avert an attack, or, at least, cause to run a benign and favorable course that which would otherwise have developed into a prolonged and serious illness. "In regarding the causation of insanity," says Dr. Mercier, "we should not exclusively concentrate attention upon the nervous system, but should remember that this is a question of general medicine. We must not wrap ourselves up too closely in our specialty; we should take wide views, and regard insanity as a malady, not of the brain alone, but of the whole man; it is a disease of the whole organism and it can only be properly understood and properly dealt with when so regarded."

Since the representative medical schools have made a course in psychiatry an essential part of their curriculum, the attitude of the profession has radically changed with reference to insanity. It is a comparatively short time since it was thought that only a state hospital or private institution for the treatment of the insane could care for these patients. It is now believed by some of the most experienced in our profession that no person should be sent to an institution who is a suitable subject for home treatment. I am convinced, as the result of a large experience, that home care in properly selected cases (and by "home care" I mean that either in a private family or a private hospital) will shorten the length of an attack by a period varying from a few weeks to several months. There can be no question, not only that the association of the insane with each other adds greatly to their suffering, as the result of personal contact, but that auto-suggestion intensifies and prolongs indefinitely the morbid mental state. It is the absence of these conditions, together with the opportunity for individualization of treatment, which makes home care so desirable and successful.

I am far from being antagonistic to our state hospitals; on the contrary, I am most appreciative of the great work they are constantly doing. They have a defi-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

ite sphere of usefulness which they alone can fill, yet, because of their imperative limitations, there devolves upon the general practitioner great responsibilities in his unavoidable relation to the insane, which responsibilities, both in justice to his patient and himself, he can not ignore.

While it is not to be expected that the average medical man should be minutely grounded in the histology and pathology of the brain cortex, it is reasonable to demand that with the clinical aspects of mental disease he should be moderately acquainted. Neither is it required that he be able scientifically to classify his cases; this, by the most expert, can only be approximately done. All that is necessary is that he should perceive that there is a deviation from the normal mental state, appreciate the underlying causative conditions, and direct the treatment and régime indicated.

I have but little sympathy with the spirit of alienistic pessimism which has too much dominated our profession. Its probable source is the teaching of Maudsley and Lombroso. This pessimism is subversive of that greatest of all therapeutic influences, hope; it paralyzes all endeavor; its gospel is that of degeneracy; influenced by its spirit, the physician regards effort upon his part as worse than useless, and the barque of his neglected patient drifts pilotless upon a most tempestuous sea.

The distinguished English alienist, Dr. George H. Savage, once said to me that if he believed as Dr. Maudsley did, he could not practice his profession. His experience did not substantiate Maudsley's conclusions. He had observed children of an insane mother or of an insane father, even of parents, both of whom were insane at the time of conception; he had kept these under observation for years, and they had never departed from the normal.

No one will deny that the innate resistance of the cortical cell in these cases is not up to the average, but there is, beyond question, an inherent tendency upon the part of the nervous system to revert to the normal, and if circumstances and environment permit, the brain cell will, in the process of time, regain its initial power.

The recognition of this inherent lack of resistance in the cell, and the prevention of special stress at such critical periods as adolescence, the climacteric and senescence, together with the buttressing of the nervous strength at all times, will prevent the nervous system from exceeding its "tensile resistance," and the life of the individual will not vary noticeably from that of his fellow. Upon the family physician devolves the supreme duty of recognizing tendency, checking it by environment, and preventing its becoming inevitable. In other words, his chiefest duty is that of prevention rather than cure.

I am aware that if inherent nervous defects go beyond a certain limit (and where this mystic boundary lies no one can say) degeneracy and death are inevitable, Nature declaring that that racial stock is no longer fit to exist. These inevitable degenerates bear but a small proportion to the entire social unit, yet their number has been greatly increased by the ignoring of the principles which I have just laid down. The necessity for the early recognition of the first deviation from the normal can not be too strongly emphasized, the standard of comparison being the individual himself. One must not overlook the normal physiologic variations which become pathologic only when they extend beyond their natural boundaries.

Persistent insomnia, digestive disturbances associated with constipation, loss of weight with a lowering of the general physical tone, inertia, abnormal elation or depression, should be regarded with grave suspicion in persons predisposed to mental alienation.

Dr. Mercier regards toxemia as the sole cause of insanity. According to his view, hereditary tendency means simply "a defective power of elimination, rather than textural defect." This surely seems too dogmatic. I believe rather that Dr. Clouston's theory, that insanity is due to perverted nutrition of the cortical cell, is correct. So-called hereditary tendency simply means that the cell metabolism is more unstable than normal. It may be stress and heredity, or it may be toxemia, with or without heredity, which gives rise to the perverted brain functioning.

The general practitioner is familiar with the mental features characteristic of toxic states, such as Bright's disease, diabetes, the fevers, pneumonia, the puerperal, post-operative and post-influenzal insanities, also those of the poisons—chloral, opium, alcohol, cocain, etc. He well knows that the insanity is toxic, and chemistry and bacteriology teach him not only its origin, but the most approved method of treatment as well.

An impoverished nutrition in one having the insane diathesis does not necessarily mean insanity; it may result in one of the neuroses, such as neurasthenia, hysteria, chorea, epilepsy. Given inherent nervous defect, the pathologic resultant may be either a neurosis or a psychosis. Perverted cellular nutrition is the basic cause of the pathological findings in insanity, such as morbid changes in the cell itself, increase of the neuroglia, degeneration of the blood vessels, and the pathological changes of the membranes, the skull and the scalp. The fundamental fact, then, which we have to consider is that of cell nutrition. Prevention of the metabolic derangement is the one thing of supreme importance. This is much easier of accomplishment in its beginning than after the complete evolution of the disease; it is for this reason I have placed so much stress upon the importance of the early recognition and treatment of mental diseases.

Physicians disagree as to the importance of rest in the treatment of the psychoses. Some uniformly keep their patients in bed; others as uniformly insist upon exercise; either method used indiscriminately is pernicious. Treatment should be individualized and the method adapted to the needs of the case, not the case to the method. The value of rest in the care of the acute insane can not be too strongly insisted upon. Perverted metabolism will remain uncorrected so long as the patient is allowed to over-fatigue himself. While functioning is excessive, cellular nutrition is impossible; the nerve cell is unable to repair in the intervals of functioning the loss sustained during the period of overactivity. In mental disorders restitution upon the part of the higher cortical elements is imperfect, and forced rest prevents abnormal activity, placing the neurons under the physiological conditions most favorable for their nutrition. Moreover, it is far from improbable that nerve cells suffering from altered metabolism generate toxins which greatly intensify the abnormal condition.

Nutrition is of the greatest importance in the acute insanities, which are, as a rule, underfed. Milk and eggs are the best nourishment. I recall an instance last year where the patient had grown steadily worse on an ordinary diet. After coming under my care I gave her as high as 140 ounces of milk, three or four eggnogs, six tablespoonfuls of bovinin, together with six ounces of

malt, daily. Her recovery was satisfactory. Full feeding is especially important in puerperal cases; it will quiet patients when hypnotics and sedatives prove utterly useless. I do not believe in temporizing. If the patient refuses food, or takes it in insufficient quantities, I always resort to artificial feeding. Some months ago I had under my care a most violent case of recurrent mania; it was the third attack, and after previous seizures death had seemed imminent from exhaustion. During this attack this was absolutely averted by the immediate and persistent use of the stomach tube until she took sufficient nourishment voluntarily.

The digestion of these large quantities of food is materially assisted by massage. The secretions can not be too carefully watched. Colonic flushings with the normal saline solution are most useful in overcoming sluggishness of the bowels. While food is the best hematinic, a good iron preparation is usually advisable; strychnia is admirably adapted both to quiet excitement during the acute stage and to assist convalescence. Whisky also is especially valuable in controlling excitement; strychnia and whisky are more efficient for this purpose than hyoscin. I have found paraldehyde, sulfonal and trional to be the best hypnotics; but the possibility of hematoporphyrinuria must be borne in mind when the two latter agents are used. I think, however, the less hypnotics are used, the better; in my experience the hot pack and the hot bath have proven more efficacious. Mechanical restraint, although seldom necessary, is at times desirable. I have had wildly excited cases ask for it, and they were certainly much quieter and less irritable when placed in the restraining sheet than when controlled by the nurses alone.

It is hardly necessary to say that a nurse, experienced in mental diseases, is very essential to the successful handling of these cases. The personal interest of the nurse in the patient counts for much in the betterment of the case; her cheery presence is a constant inspiration, while by keen insight and unfailing tactfulness she can do much to correct the mental obliquity. Observant of the likes and dislikes of her patient, she may so shape the environment as to avoid unnecessary irritating influences; with a gentle persistence she may direct along healthy channels the morbid energizing. The discovery and cultivation of some special preference or capability on the part of the patient may furnish a clew which will lead to recovery. Some years ago one of my cases of acute mania apparently ceased to improve after reaching a certain point; chronicity seemed imminent. The nurse observed that the patient possessed not a little taste and skill in botanizing. We succeeded in interesting her in the flora about St. Paul; as her interest in this work increased, her delusions disappeared.

I wish especially to emphasize the danger from suicide during convalescence; it occurs as frequently as during the acute attack. Too great care can not be taken to avoid such an unfortunate contingency.

Under certain conditions and in carefully selected cases travel is a therapeutic measure of great importance. To advise it indiscriminately is more than a mistake; it is a crime. Whether it be by sea or by land, the special nature of each case must determine. My own observation and experience coincide with the views set forth by Dr. Savage in a recent article on "The Use and Abuse of Travel," the salient points of which I here give: The purpose of travel, namely, to aid the nutritive processes, to prevent introspection, and to healthfully modify the association of ideas, must ever be kept in mind. Travel has two spheres of greatest usefulness, either as a preventive measure or as an aid to convalescence.

Slight dementia, due to serious bodily illness, and the insanities associated with phthisis, asthma, etc., have been greatly benefited by sea voyages. Paranoia is harmed, never helped; travel increases the morbid egoism and intensifies the delusions. In excited mental cases, especially in general paralysis, travel is contraindicated. Much has been hoped for it in adolescent insanity, but the results have been most disappointing. An ocean voyage is thought to be especially desirable for the milder melancholias, those arising from shock, influenza and overwork. The graver forms of the disease are only intensified by it. A case of melancholia of the pronounced religious type, now under my care, has developed melancholic frenzy as a result of being kept too constantly on the move; the quieter melancholiacs are kept, the better. Travel greatly increases the probability of suicide in this class of cases. "I think," says Dr. Savage, "the person who makes the melancholiac rush from dissipation to dissipation, is a brute, an ignorant brute."

DISCUSSION.

DR. RICHARD DEWEY, Wauwatosa, Wis.—The experience which I have had has been that the general practitioner very seldom considers for a moment the possibility of looking after a case of acute psychosis personally or at the home of the patient. Sometimes I have seen patients who might well have been cared for in their own homes sent away to institutions, and yet I think the other mistake is more apt to be made, namely, that of keeping patients who need special care and skill and experience under conditions in their own homes or in general hospitals that are unfavorable to them. The man who has had experience with this class of patients can sometimes give them excellent care, even at home, but generally speaking, the home treatment is apt to fail. According to my experience, the physician who has not had an opportunity to come in contact for a prolonged period with insane patients in institutions for the insane, is apt to fail in appreciating the interests of the case. Not infrequently he fails to take proper precautions to prevent the patient from committing suicide, or he may require more of the patient than the conditions of the case will admit or are desirable in the way of exercise. Such patients are also decidedly apt to be kept too much under narcotics, particularly if demonstrative or noisy. The question of travel, to which Dr. Riggs referred in his paper, is another point in regard to these cases that requires careful consideration. In the incipient stages of the acute psychoses, or during the period of convalescence, travel may prove beneficial, but in the acute stage, especially in those forms of psychosis in which there is depression, there is so much self-concentration that these patients are incapable of taking any interest in travel or of deriving any benefit therefrom, while they obviously incur certain dangers.

DR. JOHN PUNTON, Kansas City—I am a firm believer in the theory that in the treatment of all forms of acute psychosis very little can be done towards a cure without proper and absolute isolation, whether at home or away from home. One of the great drawbacks I have to contend with in the treatment of this class of cases is to keep the patient free from all outside influences, especially the friends and relatives. A great many general practitioners can not realize the importance of this measure, and in referring the case they try to make all sorts of compromises with you, and tell you that they will turn the patient over to you providing you permit the friends and relatives to visit him when they please. I think the lesson ought to be taught to the general practitioner that at times absolute isolation is necessary. Sometimes resort to absolute isolation, however, is not imperative, but the majority of cases require it within certain limits. One of the great difficulties in connection with the acute psychoses is their early diagnosis. Very few practitioners are qualified to make

a diagnosis of an acute psychosis in the early stage of the disease. Very few general practitioners are fully awake to the fact that upon what is done during the first three months of an acute insanity largely depends the chances of recovery. These cases rapidly pass from a curable to an incurable stage. I do not regard a general city hospital as a proper place for cases of acute insanity, nor do I think that such patients should be kept in asylums. I think the more sane we can make his surroundings, the better for the patient.

Dr. Frank P. Norbury, Jacksonville, Ill.—From the standpoint of the general practitioner, we can look upon many of the problems of the acute psychoses as belonging to internal medicine, and I look upon acute cases, especially in adolescents, as chiefly in that field of problems. Not infrequently these patients are suffering from malnutrition, due to overstudy, loss of sleep, faulty feeding or defective elimination; anemia is pronounced, and, if this and other conditions of innervation are recognized and taken hold of at the proper time and in the proper way, I am quite sure that much can be done for these unfortunates without the necessity of waiting for the development of insanity and then resorting to its routine treatment. The general practitioner should fall in line with the alienist in the treatment of the acute psychoses and the alienist must be a well-grounded, thorough internalist. I know full well, both from my experience in the hospital and as a consultant out of it, that the general practitioner is too apt to put all these cases in one class, and, ere he resorts to an inquiry as to what are the problems involved, he is too willing to resort to the use of sedatives and hypnotics. We who are working in internal medicine as well as giving special attention to mental diseases, are loth to regard insanity in general, leaving out the question of heredity, as involving anything more than great problems of internal medicine.

Dr. C. A. Drew, State Farm, Mass.—It seems to me that the general practitioner, when he treats these cases at home, is obliged, because of the surroundings of the patient, to resort to the use of drugs which he knows are not, perhaps, for the best interests of his patient. He has many difficulties to contend with that the physicians in institutions have not. The problem is largely one of internal medicine, and it is often necessary to get the patient away from his immediate friends and family. Their overanxious state is detrimental to the patient's welfare and interferes with the treatment. As regards the treatment of a case of acute psychosis, elimination is of the first importance, and this is best obtained by the use of cathartics, Turkish baths and cold sponging. The patient should be removed from his immediate family and at least two good nurses should be provided to take care of him; in cases of delirium, three nurses are not too many. One suggestion made by the essayist should be accepted with some hesitation, namely, the use of alcoholic stimulants. Most cases have an underlying neurasthenic constitution, and we might do them great injury by stimulating them with alcohol at this stage. Indeed, alcohol is rarely, if ever, indicated in acute psychoses of patients under 50 years of age. In the involution psychalgia of an older patient, its anesthetic effect may be grateful and less objectionable than that of opium. I can not endorse too heartily the recommendations as to early, forced feeding, and the use of strychnin as a stimulant when stimulation is needed. This, after the torpid bowel has been thoroughly unloaded, is among the most important precepts of mental therapeutics. Substituting the Turkish bath or the wet pack for alcoholics, when a sedative is needed, I could heartily agree with every proposition and conclusion of Dr. Riggs' paper.

Dr. Orpheus Everts, Cincinnati—So far as Dr. Rigg's views of the subject presented are hypothetical, they are as good as any. So far as they are practical, I endorse them fully.

Dr. J. G. Biller, Cherokee, Iowa—I have had considerable experience in the treatment of insane people at home, and the results have always been disastrous. If patients were removed from home when insanity first manifests itself, a large proportion of them would be better off. In my section of the country most of the people are farmers, and, although many of them are intelligent as regards the ordinary affairs of life, they are not intelligent when it comes to taking care of a crazy person. Their sympathies are too apt to run away with them. The patient will receive better attention and his chances of recovery will be better in a well kept institution for the insane, even though trained nurses can be provided for his treatment at home.

Dr. F. W. Langdon, Cincinnati—It has been my fortune to be obliged to treat many cases of the acute psychoses outside of institutions for the insane, and I have seen a fair proportion of these cases terminate favorably. Yet, we should remember that the environment in which the abnormal mental state developed is not the best in which to recover from it. Many of the mental aberrations consist of distorted associations, and they can not be treated satisfactorily in the accustomed surroundings. In exceptional cases they may be treated successfully at home, but even then the wisdom of this course is doubtful. Most of these patients are poor and the expense of skilled attendance is more than the average family can bear for any length of time. Such patients can be better taken care of and for less money at a private institution. However, there are many places aside of the patient's home and the regulation institution for the insane where these patients can be successfully and satisfactorily treated. I refer to small convalescent homes or a farm where in a private family the patient's environment can be completely changed. If "non-institutional" treatment were substituted in this paper for "home" treatment I should agree with the conclusions.

Dr. M. P. Sexton, Kansas City—It is entirely impracticable to treat a case of acute psychosis at the patient's home. Even where they have the means to do everything that is necessary, it is impossible for the family to turn the patient over to the doctor and nurses. There are certain home influences which will prevent the doctor from carrying out his views. I believe, therefore, that everyone of these cases, unless the illness is exceedingly brief, should be sent away from home and placed in an institution where the medical man is constantly on the ground and in absolute control, and where every one connected with the institution is trained for his or her work.

Dr. F. Sayary Pearce, Philadelphia—I wish to indorse what Dr. Riggs has said as to the practical advantages of forcing the patient to take nourishment. I have in mind a patient, a young woman suffering from hebephrenia, who was apparently drifting into permanent dementia. She refused to take nourishment of her own accord and resort was had to forced feeding. By means of the stomach-tube, large quantities of milk were introduced into the patient's stomach daily, and she immediately began to improve and is perfectly well to-day. It is a singular fact in these cases that if you persist the patient will finally acquiesce in the method of treatment even though refusing to swallow from a glass. The patient to whom I have referred would not take any food of her own will, but, as soon as the nurse produced the stomach-tube, she would open her mouth and allow it to be introduced. In my opinion, forced feeding is as important as the environment.

Dr. Harold N. Moyer, Chicago—In the management of a case of acute psychosis, it is not always possible to do the ideal thing. We are frequently forced, by the circumstances of this or that particular case, to temporize, and we often lay down rules one day, only to break them the next. This, at least, has been my experience. I have in mind a case of acute psychosis that recovered after a course of treatment at home and in travel extending over a period of about two years. The expense of his treatment was between $30,000 and $40,000. There was no time during his illness that removal to an institution would not have proved beneficial, and he would probably have recovered there at least six months sooner; the main thing with the friends, however, seemed to be to avoid commitment to an institution.

Dr. H. A. Tomlinson, St. Peter, Minn.—I want to call attention to a statement made in the paper which might lead to misapprehension. The persistence of the idea that it is harmful for the insane to be associated together is contrary to the

experience of those who are most familiar with their care. Within the past year this subject was discussed in two papers by prominent German alienists, both of whom stated that in their experience recent cases of insanity are best cared for in dormitories, and that their association together is an advantage, because it gives the patient something besides himself to think about. This has also been my personal experience. Any case of acute insanity can be treated successfully outside of an institution, but I agree with the statement made by Dr. Langdon that no insane person can be cared for so well nor cured so promptly while living under the conditions in which the mental disturbance developed. There should be not only an entire change in environment, but also the removal of every one connected with the life of the patient at the time of the outbreak of the mental disturbance. For these reasons, unless circumstances are exceptional, any given case of insanity will recover in an institution properly equipped for its care more quickly than the same patient will in a general hospital or a private house.

DR. JAMES G. KIERNAN, Chicago—I have had considerable experience in the treatment of acute psychoses, both as a hospital physician and as a neurologist outside of the hospital. In dealing with such a case, various elements, to some of which Dr. Moyer referred, must be taken into consideration. In a large number of cases of confusional insanity, it does not make much difference whether they are treated at home or in an institution, but it does make a difference whether or not a commitment should be made out. Commitment in most of the states is attended by disgraceful publicity and it leaves a certain stigma. The mental confusion states can be advantageously treated in sanitariums and in general hospitals. Home treatment of these cases, however, is exceedingly trying on relatives, and more than one member of the family may break down from the care of such cases. Neither neurasthenia nor hysteria can be properly cared for in the home environment, and such patients must be removed from home ere much can be done for them. This is true to an even greater extent of the psychoses. Melancholia, for example, should never be taken care of at home. The environment has a bad effect and suicide is always an imminent possibility. Wealth can not guard against this when they are taken care of at home. The home care of acute psychoses is harmful rather than beneficial, and is an important factor in the increase of the insane; under home conditions the insane but too frequently pass from an acute to a chronic state. The influence of the chronic insane on the acute insane has for decades been shown to be beneficial. In this, Krapelin but repeats the experience of alienists the world over, and this position has almost become a truism among alienists. The influence of the chronic insane upon the acutely insane of the explosive type is peculiarly beneficial. It conduces to an amount of self-control by them not otherwise attainable. The objections charged to the association of the acute and chronic insane arise from the disgraceful overcrowding of the insane hospitals for the benefit of the localities in which they are built. Such overcrowding prevents individual treatment and supervision, the absence of which has for decades proven very injurious.

DR. C. E. RIGGS, St. Paul, in reply—I believe that the distinction that has existed between the neurologist and the alienist is a thing of the past. As practicing physicians, we have to deal with both of these conditions, and as the result of my experience, I have formed definite conclusions on the subject, and these I have given you in my paper. I have had patients plead with me never to send them back to state institutions. I am not decrying the institutions themselves, but the disagreeable associations connected with them. We all know the effect of suggestion, whether upon the sane or insane, and I am firmly convinced that the suggestion of the chronic insane upon the acute cases is harmful and undoubtedly prolongs the condition which we are trying to correct. I use the term "home care" in a modified sense. I fully recognize the advantages which have been referred to, and in many instances we must accommodate ourselves to the particular circumstances of the case. The stigma that attaches to this condition in the eyes of some people undoubtedly is one of the factors which induces the family or friends to try to keep the patient at home. One of the objects of my paper was to call attention to the incipient manifestations of the trouble, and its relations to the problems of internal medicine. The use of alcoholic stimulants in these cases is only advisable in certain instances. I have seen whiskey used with beneficial effect in these cases; if necessary, it should be given freely, practically *ad libitum*, until the desired result is attained, but not longer. I recognize the dangers referred to, but I have never seen any unfavorable results follow its use after the recovery of the patient.

THE PSYCHOSES OF CHOREA.*

HAROLD N. MOYER, M.D.

CHICAGO.

Our nosology fails to distinguish between chorea which occurs as a symptom in the course of an infection, which by some is regarded as a rheumatism, and that which is dependent upon organic disease. The acute chorea which has more or less involvement of the joints and pericardium, and sometimes without it, is commonly spoken of as the chorea of Sydenham. The agent is not the same in all of the cases. The choreas which are associated with mental disease in adults, generally have an organic basis; the secondary dementia accompanying post-hemiplegic chorea, and Huntington's chorea, are due to progressive degeneration of the cerebral cortex, associated with dementia. Many of the insane present choreic movements, which are simply the expression of organic changes in the cortex, occurring in the terminal states of the ordinary psychoses.

Excluding the choreas of advanced life usually associated with organic disease, the occurrence of a well-marked psychosis in the progress of the chorea of Sydenham is exceptional. The case which is reported in this paper is the only one that has come under my observation.

The mental condition of the choreic child is one on which there is no unanimity of opinion. Spitzka[1], prompted by a sensational claim made in the New York Neurological Society that all choreic children are morally imbecile, says: "In mild cases of chorea the mind is no more seriously affected than in any other affection annoying to children and associated with insomnia. Even in severe cases, the mental faculties may be found to be quite intact. Such disturbance as is found in the majority of cases, is the result of the motor disturbances and of the ensuing restlessness, irritability and peevishness of the child. In protracted cases of chorea, the mind suffers in the direction of actual insanity; in that case, maniacal outbreaks, confused delirium, enfeeblement of the memory, rapid emotional change, and, in extreme cases, dementia may ensue." A psychosis with these symptoms is to be designated as choreic insanity.

Regis[2] gives a much better picture of the mental condition of choreics. He calls attention to their defects of memory and attention, the mobility of ideas, the lack of consistency in the recollections and the mental hebetude. The most characteristic symptom in these patients is the existence of special hallucinations to which Marce especially called attention. These almost always involve vision; very rarely, taste, hearing or common sensation. They are especially common in females and rarely appear before 14 years of age. They occur chiefly

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in the evening, in the drowsy condition between waking and sleeping, and are very often continued in dreams. They are always of a painful nature, terrifying and fantastic, and abound in scenes of deaths, burials, obituaries and conflicts. They cause so much terror that the patient is in fear of going to sleep and will try to keep himself awake in consequence. When these hallucinations are continued into the sleep, they cause nightmares. This symptom is sometimes a premonitory sign, occurring many days prior to the convulsive movements. Sometimes, and more commonly, it appears at the time the choreic paroxysms show themselves. Its early disappearance is a favorable sign; sometimes it becomes continuous and deepens into an actual insanity. The majority of choreic patients are impressionable, emotional, disputative, and even violent.

This picture of Regis of the mental condition of the choreic accords with my own experience. Of the last ten cases which I have seen of the chorea of Sydenham, occurring after 10 years of age, four presented in well-marked degree, the changes which Regis describes. In four others the history was so imperfect that such mental phenomena might easily have escaped detection. The remaining two were surrounded by people who were sufficiently intelligent to describe such a condition had it existed; so its absence may be reasonably predicated.

My own judgment of the mental condition of choreics inclines more to that of Regis than of Spitzka, though it is to be remembered that the latter describes the peevishness and irritability which goes to show that he does not regard the mental condition of the choreic as quite normal. He does not, however, refer to the specific hallucinatory stage preceding or accompanying the choreic manifestations, which was pointed out by Marce, and which my observations show is frequently present.

Regis, in speaking of choreic insanity proper, says that it may be either maniacal or melancholic. Certainly the former is the most frequent, as I have not met with it in my own experience, nor have I seen a well-marked case of melancholia or seen a report of it described in the literature. Meyer[3] in discussing choreic insanity, says that no one can doubt that derangement of the mental functions in acute chorea is very common. He regards the maniacal form as the most frequent, but also recognizes the agitated melancholic type, and even an acute delirium, occurring in this disease. In chorea he recognizes two types; those in which the insanity precedes by some time the chorea and those in which it comes on some time after the chorea. He describes the case of a girl of 8 having marked mental depression, with a tendency to remain in the same position. Once or twice a day she became, without any external cause, suddenly excited; she scolded, broke what was within her reach, and struck at those who went near her. All hallucinations were denied, a statement which was repeated after her recovery. Three or four days after commencement of this state, choreic movements were noted, at first slight, but later becoming general. At the end of six weeks' treatment, the choreic symptoms had entirely subsided and with them the mental derangement.

My own patient was that of a fairly well-developed girl, 15 years of age, without neurotic heredity—at least so far as could be gathered from an imperfect family history. In the spring of 1900 she developed choreic movements fairly well marked in the upper extremities, which later became general. In the third week she became acutely maniacal, restless, sleepless, singing, constantly dancing about, knocking against the furniture and other objects until the skin became excoriated and bruised in many places. Sleep was impaired and her nutrition rapidly failed. Under treatment, which included rest in bed, there was a gradual lessening in the choreic movements and a complete recovery from the chorea and with it a disappearance of the mental symptoms. In the spring of the present year the chorea returned and with it the acute maniacal conditions. The symptoms presented were identical with those of the preceding attack. A few cases of acute insanity in the course of the chorea of Sydenham have been reported of recent years.

Bode[4] described a case in a woman 24 years of age who, five weeks before coming under observation, had given birth to a child. The mental symptoms were melancholic in type. The chorea and insanity lasted a month and a half, and during its progress she developed an optic neuritis, which improved under treatment. In this case the symptoms point to organic disease, probably a luetic trouble.

Jastrowitz[5] reports the case of a girl 20 years of age who developed a mental trouble in which there was depression having the general appearance of a primary dementia. During the progress of this affection, chorea developed with the ordinary accompaniments of pain in the joints. Later, the chorea disappeared, but without very marked improvement in the mental condition. A second case reported by the same writer is much the same in its clinical history, excepting that there was improvement in the mental condition and the chorea, though there remained a loss of memory for the period of the illness and an impaired recollection of happenings prior to the illness.

Cowen[6] reports a case of maniacal chorea in a man 21 years of age in which the chorea developed some time after the onset of the psychosis. There was complete recovery from both the chorea and the mental disease, but with a loss of memory of occurrences during the period of the illness.

Reifensthul[7] describes two cases of chorea minor which were accompanied by marked mental symptoms, the character of which is not stated.

C. W. Burr[8] reports a mixed case in which chorea and acute delirium occurred in the course of scarlet fever.

It will be seen that the rarity of reference in the literature shows that insanity in the course of Sydenham's chorea is exceptional. My own case is one of the most typical so far described in the literature. Many of the cases reported are evidently associated with organic disease of the nervous system, acute febrile affections, or pregnancy, in such a way that the direct relation of the psychosis to the chorea is obscure.

The following conclusions are justified by our present knowledge of the subject:

1. A well-marked alteration of the character and mentality can be noted in the majority of cases of chorea, usually preceding by some weeks the onset of the choreic movements.

2. Distinct hallucinatory phenomena are present in a considerable number of cases, which are not, however, of sufficient severity to merit being classed as a distinct psychosis.

3. The mental disturbance in chorea usually comes on after choreic movements, but it may precede them.

4. The type is usually maniacal, though it may occasionally be melancholic or present the character of an acute delirium.

5. Mental disturbances are commoner in older children; they are rarely observed before the twelfth year.

6. Choreas which are accompanied by mental disturbance later in life, are almost always accompanied by organic changes in the central nervous system.

7. The prognosis is favorable when the mental disease complicates the simple, acute chorea of Sydenham. Insanity associated with chorea in middle and advanced life is almost invariably associated with organic disease of the central nervous system.

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DISCUSSION.

DR. C. EUGENE RIGGS, St. Paul—I saw two cases of chorea associated with insanity last winter. I found the literature very barren upon this phase of chorea, and was interested in the phenomena these cases presented. In both of them the mental condition followed the chorea. One was a colored girl, about 15 years old; the other was a young man, about 17. The girl was apathetic; she would not talk, could be induced to take nourishment only with the greatest difficulty, and had spells of intense excitement, when she had to be restrained. The young man was rational at intervals, with periods of excitement, and he showed a suicidal tendency. He made a perfect recovery. The last time I saw the young woman her condition was unchanged, but I think she will recover.

DR. E. G. CARPENTER, Columbus—I have observed perhaps half a dozen cases of insanity combined with chorea in the adult. Two of the cases were Huntingdon's chorea. Four of the cases resulted fatally. It is safe to look upon insanity following Huntingdon's chorea in the adult as a grave condition. In the cases which I observed, the patients gradually grew worse and died within two or three years. The choreic movements became very active and led to exhaustion.

DR. EDWARD E. MAYER, Pittsburg—I have been interested during the past year in the psychoses of chorea on account of two cases which were under my care. One was a case of mania following childbirth, which had been preceded by choreic manifestations. The other case, which I saw recently, was a woman who is still under treatment. She suffers from chorea accompanied by mental depression. The chorea came on immediately after the menopause, which was about two years ago, and about six months later she developed symptoms of mental depression, which have resisted various methods of treatment and have steadily progressed, until now she presents the typical picture of hypochondriac melancholia. I can not entirely agree with the statement made by Dr. Moyer that we fail to differentiate the chorea which represents an infection and that which is a symptom of some known organic disease.

DR. JOHN PUNTON, KANSAS CITY—While the literature upon this subject is rather scanty, I do not think these cases are so very rare. About six years ago I had a case of acute mania, of a very violent form, coming on during the course of a chorea. The patient made a good recovery in four or five months. Since then she has remained entirely well, and has married.

Foreign Bodies in the Rectum Among the Convicts in French Guiana.—Clarac writes from the penal station in Guiana to the *Annales d'Hygiène et de Méd. Coloniale* that the convicts secrete money, saws, files, etc., in their rectum to conceal them until an opportunity for escape arrives. They put the articles in a small cylindrical metal box and manipulate the box close to the sigmoid flexure. The symptoms of proctitis, etc., which are induced by this foreign body attract attention to the patient, and the box can usually be palpated.

MIRROR-WRITING AND THE INVERTED IMAGE.*

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The retina receives an inverted image of objects as they are related in the outer world. That this is so is proven by all text-books of optics[1] and accepted by all text-books of physiology.[2] But the fact that we do perceive objects in their normal relations, although equally undisputed, has been the subject of many theories, both fanciful and serious, since the modern scientific world has been dominated by inductive philosophy. One of the earliest explanations was that of retinal function by which the retina itself projects in a certain direction only the image received upon it, and is connected by one particular nerve fiber with the brain in such a way that the brain connection of the upper retinal element lies below, that of the lower above, that of the right to the left and of the left to the right, so that the image is reinverted on the cortex of the brain. This theory can be received neither by the physiologist nor by the psychologist, for we know that the nerve connections are by no means so simple as this implies, and that the visual process itself is so complex that it must be developed by education before it becomes the perfected function which enables us to localize in space.

A second explanation is that of cerebral function, which to the metaphysical psychologist is an act complete in itself and not amenable to any further analysis. Physiological psychology, however, demands that the cerebral process be analyzed into its component factors. And in doing so we learn that the visual act is by no means so simple as it would appear. In fact, any similar psychic act is complicated. "We may," says Binet in his "Psychology of Reasoning,"[3] "consider external perception as a synthetic operation, since it results in the uniting of the information actually furnished by the senses to the information furnished by preceding experiences. Perception is a combination of the present with the past. To perceive a body which is actually in the field of vision, to recognize in it a certain form, size, position in space, certain qualities, etc., is to unite in a single act of consciousness actual elements (that is to say, the optical sensations of the eye) and past elements (that is to say, a crowd of images); it is to make a single body out of these unconnected elements. This is a phenomenon which completely escapes consciousness; by consulting that witness alone, the operation of perceiving an object appears to be an easy and natural act which demands no effort of reflection on our part; that is in reality an illusion. Experiment and reasoning prove to us that in all perception there is work." Meynert, in his essay entitled[4] "Zusammenwirken der Gehirntheile," gives expression to identical views. We must necessarily, therefore, consider the apperception of the image as a very complex process, into which perception, association and co-ordination enter.

It is not, however, within the province of this article to discuss in greater detail the phenomena of vision; they are at best nothing but a receptive psychic process. Re-

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tween this and any productive manifestation of our visual act lie the equally complicated psychomotor acts. There are innumerable motor acts which depend for their stimulus upon vision: if we see a falling body we jump to one side, since we have learned that that is the way to avoid danger. In a more deliberative way, when we reach for anything we extend the arm in that certain direction in which experience tells us the object lies. If we wish to reproduce anything by writing we accomplish this by combining visual impressions with psychomotor and motor processes. It is this combination which interests us here particularly.

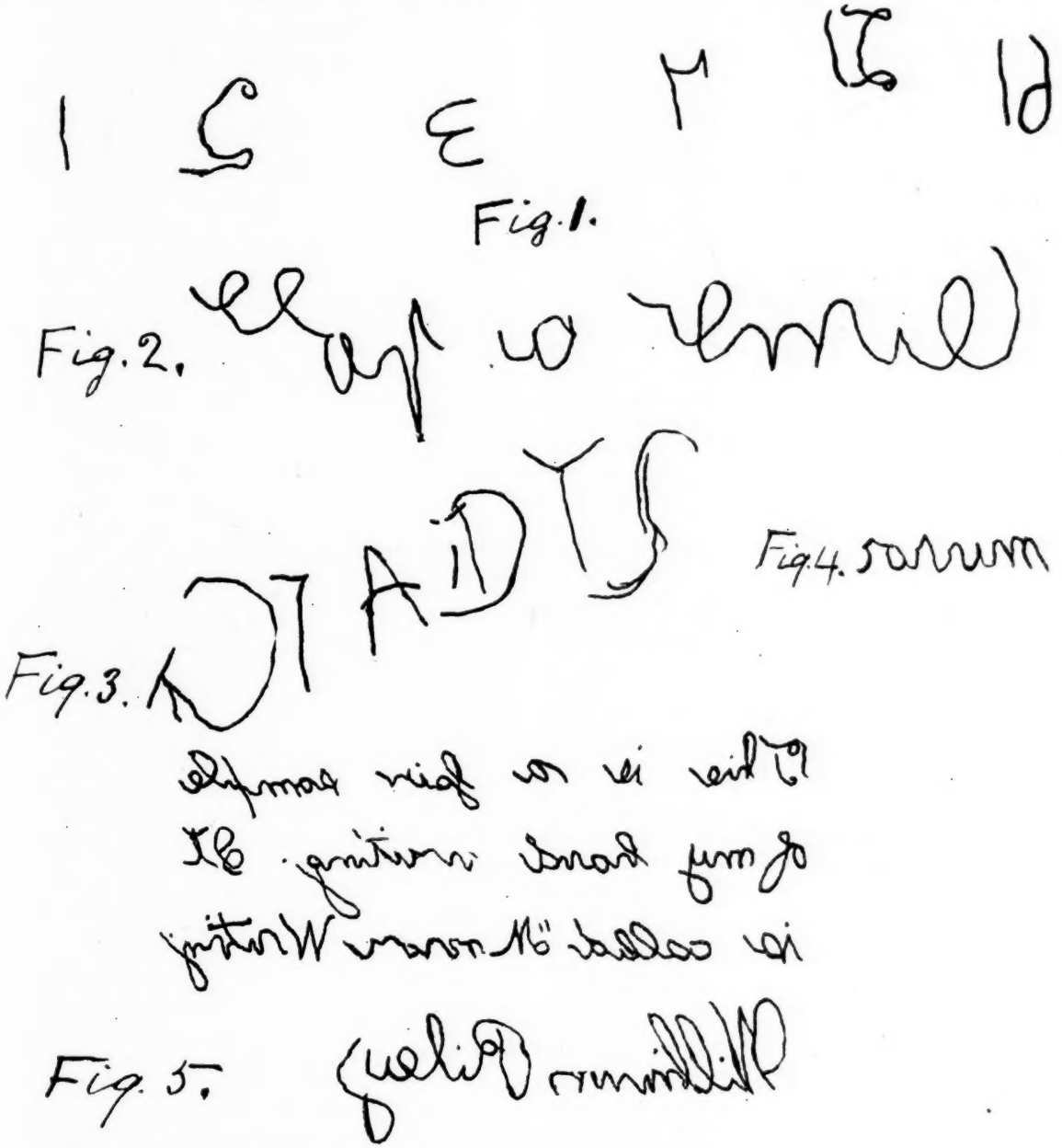

Fig. 1.—Spontaneous writing of numerals (1, 2, 3, 7, 21, 16). Boy, righthanded, 5 years, 6 months.
Fig. 2.—Spontaneous mirror-writing. Boy, righthanded, 6 years, 2 months.
Fig. 3.—Spontaneous name-writing. Girl, 5 years.
Fig. 4.—Mirror-writing. Girl, 13 years. (St. Paul Medical Journal, 1900, p. 386.)
Fig. 5.—Mirror-writing. High-grade male imbecile, 13 years. (From Mills: Journal Nervous and Mental Diseases, 1894.)

Hitherto writing has been studied in its motor rather than in its psychic aspects, and this is especially true of that pathological condition resulting from defective cerebral activity, mirror-writing. Almost all of those who have written upon this subject during the last twenty-two years have been influenced to a greater or lesser extent by the theory of Erlenmeyer, who gave a purely mechanical explanation for the occurrence of mirror-writing in those whose right side is paralyzed. So strong has been this influence that but very few of these writers have even mentioned the occurrence of mirror-writing in righthanded, healthy persons. Erlenmeyer, in his monograph entitled "Die Schrift,"[5] starts out with the statement that abduction (from the body) is the natural method of executing all finer movements, consequently also of writing. His corollary to this is "that righthandedness is the result of writing with the right hand, and the greater development of the left cerebral hemisphere the result of righthandedness, not its cause." Consequently that those who wrote from right to left must have been lefthanded. In support of this he quotes from the ancient Jewish Thalmud to the effect

that writing on certain religious scrolls must be done with the right hand, but that when there is a lack of such scrolls the use of those written with the left hand was to be permitted. A translation which we have had made by a competent scholar shows, however, that this does not mean that the ancient Jews were lefthanded, but that writing with the left hand, though allowed, was still, as with us, an exceptional condition. While Baelz,[6] who resides in Japan, in reviewing Erlenmeyer, proves that many of his statements about right and lefthanded writing are utterly false.

A further elaboration of the theory just mentioned applies it to mirror-writing by asserting that when in consequence of some lesion to the left hemisphere the right hand is made useless, the left hand must necessarily follow this general impulse toward abduction and in writing pass from right to left and produce what we call mirror-writing.

Many authors, although supporting Erlenmeyer's theory by numerous illustrations, incidentally mention a certain degree of mental weakness as an essential factor in producing mirror-writing, and assert that in lefthanded children of a certain age mental defect without hemiplegia may be sufficient to cause mirror-writing. Among righthanded feeble-minded children who were asked to write with the left hand, a relatively large number produced mirror-writing. An attempt to examine writing done by such children with the right hand has never been made upon a larger scale, but there are some few isolated observations which show that under these conditions also mirror-writing may be produced. Such a case has been reported by Sweeny in the *St. Paul Medical Journal*.[7] Of the occurrence of mirror-writing done with the right hand and by mentally normal children we have found records of only two instances in literature; the one is that of Preyer's child, who in his "Die Seele des Kindes"[8] states the following: "That my child when in his early years he was asked to write the ordinary numerals, as I showed them to him, to my surprise copied in mirror-writing most of them, especially the 1 and the 4, the last frequently also inverted, the 5 on the other hand always correctly; this is not, of course, due to an error in vision, but to an incorrect transposition of the visual image in those motor images which are necessary for writing. Other boys acted—I was informed—the same. The distinction between right and left caused me difficulties in my own childhood, which even now I remember distinctly."

A second similar observation is that recorded by Dr. Albert B. Hale in the *Ophthalmic Record* for May, 1900,[9] which led to the investigations here reported. But that it does occur, and that very commonly, in intelligent, normal, righthanded children, there can be no doubt. Discussion with many teachers in kindergartens and with intelligent mothers has shown us that children in their earliest years, when they have not yet been taught systematically to write, but are stirred with the imitative impulse characteristic of the young, do write in mirror-writing with their right hand, not always, but quite frequently, and with less and less frequency as education advances and observation becomes more exact. We have a number of examples to illustrate this fact, most of them produced by children of between four and a half and seven years, and it will not be difficult for any one to obtain such an example from a child of the proper age if, with patience, he submits the child to a series of tests. It must be noticed that these specimens are not copies by the child, but are purely spontaneous productions by the child's hand of the image he had in his mind. It is not possible to express in figures the frequency with which this phenomenon occurs, owing to the very fact that it must be spontaneous; because to ask a certain number of children on a certain day to produce certain results would be to destroy the proper time and spirit, since these can be secured only occasionally. But we have no hesitancy in saying that almost every child at a certain period of its development will be found to produce spontaneous mirror-writing, and that, too, with its right hand.

The question may well be asked here, to what do these facts lead? Or is it possible to connect all the different conditions under which mirror-writing is produced with the phenomena of visual apperception? Hitherto we have discussed only the psychomotor and motor expressions of vision as we find it in the child, and these facts seem to offer no satisfactory explanation for the relationship between the inverted retinal image and writing. If, however, it were possible to place the brain of an adult, trained in psychological observation, in the position of the child, and if we could then study the effect of this new retinal image upon motor expression, and could find that, after all, tactile sensation adjusts itself to visual sensation by association, then we might hope to approach the solution of the problem. Fortunately, such experimental proof has been furnished by Professor George M. Stratton, who, in a number of papers, gives the results of experiments on "Vision Without Inversion of the Retinal Image."[10] This as stated is a paradox, for while in the case of the child we have discussed the normal inverted image, Professor Stratton has by means of lenses produced in himself an upright retinal image. But on careful consideration it will be seen that the adult mind by experience has acquired the habit of associating all his tactile sensations with his natural visual sensations, and as it is impossible to dispossess him of these tactile sensations, it is necessary to give him a new retinal image so that this association may be disturbed and, relatively speaking, made to become as they were primitively. To be sure, the new condition is not identical with that in the child, and never can be, because the adult has a large number of memories from which to draw, while the child must both acquire memories and learn to use them. But the experiments of Professor Stratton have temporarily demanded that he form a large number of new associations, in order to co-ordinate his visual, tactile and other sensations. It is impossible to quote at any length from Professor Stratton's most interesting papers; they must be read in full to judge of their convincing character. We must here be satisfied with referring you to these papers in the *Psychological Review* for November, 1896, July and September, 1897, and in *Mind*, viii, New Series, No. 32, and to the discussion in the report of the Third International Congress for Psychology in Munich, 1897. They show that under these unnatural conditions the knowledge of spatial relations was reacquired under more or less difficulty and that our perception of the field as upright is not dependent upon the inversion of the retinal image. He very soon learned the distinction between the new above and below, but found that "right and left were felt to be by far the most persistently troublesome relation, when it came to translating visual into tactual or motor localization," an experience which agrees beautifully with that of Preyer quoted above. He furthermore found that "the inverted position of the retinal image is, therefore, not essential to upright vision." An experience with which we are all familiar demonstrating the correctness of this view, is found in our everyday use of the mirror. We dress ourselves, we

adjust our neckties with the transposed image without difficulty, because these simple acts have become habits, but as soon as we attempt an unusual performance with the aid of the mirror, we become awkward and find it difficult to distinguish right from left, and forward from backward, while we readily differentiate the above from the below.

To sum up, our knowledge of spatial relations does not depend solely upon the perceptive organ, but is rather a complicated process of mental co-ordination. The retinal image remains the same, but our mental image of it is guided by our experience acquired laboriously through the other senses. The doctrine of Binet receives one more confirmation.

Let us now recapitulate under what conditions mirror-writing has been observed. We have already dwelt long enough upon that phenomenon which we may call normal mirror-writing and which, as we have shown, is a frequent occurrence in righthanded healthy children of a certain age. Into this group belong those instances mentioned by Durand[11] of mirror-writing produced by adults possessed of little intelligence and who seldom write. Such cases are of common occurrence, and most of you have undoubtedly seen signs crudely painted by the uncultured in which one or more letters or numerals, the S and N particularly, were reversed.

As a pathological condition mirror-writing produced with the left hand is rather common in children with impaired intelligence (see references 12 to 19 inclusive), deaf mutes (references 20, 21, 22), the blind,[22] and in cases of katatonia.[23] No investigations as to results obtainable with the right hand were made in any of these conditions except in the case of Sweeny, mentioned above. Furthermore, mirror-writing done with the left hand has been seen in those who, through some brain lesion, have lost the use of their right arm, and in some few instances when through accident to the right arm itself this member became useless.[24] Both in feeble-minded children and in hemiplegic adults the fact has been noted again and again that coincidently with improvement with the mental condition the tendency to produce mirror-writing decreased.

The question here presents itself, What mental and physical condition have all of these cases in common? Of the existing two theories neither one gives an explanation which will satisfactorily cover all of the cases just mentioned. Erlenmeyer's purely mechanical theory, besides being based upon incorrect data, does not in any way throw light upon those very frequent cases in which individuals do mirror-writing with the right hand. While it can not be denied entirely that the well-established habit of writing in abduction movement with the right hand may have some influence upon the production of mirror-writing with the left hand, still this influence can not possibly be very powerful, or otherwise mirror-writing in hemiplegics would be the rule rather than the exception.

Ireland's theory[25] is even less satisfactory. He believes "that in the case of paralysis of the right arm the image or impression or change in the brain tissue from which the letters are produced by the hand was destroyed, and that in trying to write with the left hand the patient wrote from an image on the right side of the brain in every way corresponding save that it was reversed. Thus D on the left side would have ⊏ on the right, written from left to right with the right hand, or from right to left with the left hand." Modern physiological psychology can not accept with such completeness the dual character of the brain. Then the first objection could be made to this theory also, it does not cover all cases. Credit must be given Ireland, however, for introducing into the process some consideration of the visual element.

Mirror-writing is not a pathological effect per se, nor is it confined to the mentally defective. It is found in the youngest of children and disappears with greater rapidity among the normally intelligent than among the feeble-minded, until at last with but few exceptions it is found only among the mentally defective or in those with some organic brain lesion. Buchwald,[26] Preyer,[8] and Treitel[21] all admit that the condition is not essentially pathologic, and we agree with the last named when he states that Soltmann[27] goes too far when he sees in mirror-writing "the mirror of a diseased mind."

The link that unites all the various states in which mirror-writing shows itself must be an imperfectly developed or pathologically disturbed psychic association and co-ordination. Imperfectly developed in the very young, and in some of the mentally defective, pathologically disturbed after hemiplegia, and in certain acquired psychic disturbances, among which katatonia must be mentioned, the psychosis in which "idea association is nullified."[23]

Why, then, it will be asked, if the inverted retinal image is such an important factor, is it simply mirror-writing and not a complete inversion of the reproduced character? An answer is found in the various analogies offered by physiology and pathology, which show that the function last and with greatest difficulty acquired is the first to be lost. In this instance Stratton's experiments again corroborate the theory. He found that the lateral relationships were the hardest to acquire. Common experience teaches us the same, even the mature adult frequently having difficulty in distinguishing the right from the left.

Our thesis then is this: The outer world is impressed upon the retina in an inverted image. It is only by experience laboriously acquired that we learn to interpret this image and to produce upright writing. The child and the feeble-minded, lacking this experience or unable to acquire it, reproduces the visual image in incorrect spatial relation, hence in mirror or completely inverted writing. The adult suddenly deprived of this experience is reduced to primitive conditions, hence produces the same results which we see in the child.

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DISCUSSION.

DR. G. C. SAVAGE, Nashville—In the first place allow me to say that without being able to offer any explanation for it at all, I believe it to be a truth that the normal eye has a certain plane that should be parallel with the median plane of the head and that that plane bisects the retina. I believe there are two different things connected without vision, that some are gifts and some matter of acquisition. Direction I believe to be a gift and I do not believe we can acquire an idea of direction. I believe that color is another gift, and do not believe we can acquire a sense of color. That direction may be interfered with occasionally I grant and we can not explain why one person has a perfect sense of color and another person an imperfect sense of color, and the same applies to the sense of direction. The things that come by acquisition are the appreciation of form, size, distance, etc. Now, in explanation of the gift of direction, someone, I think it was Cunningham, discovered the law of direction 150 years ago, and if I am right about it then the sense of direction is easily explained, and I believe that the law of direction is that every line of direction must begin at a point on the retina, impinge at the point of light forming the image and pass from that upwards, downwards, outwards or inwards and thence on into space.

I am not going to explain why it is that a child writes a letter now and then that is inverted, but I do believe that sometimes we may be deceived by the statement of individuals. I well remember the report that many of you saw a few years ago from an Arctic explorer who wanted to see whether the Eskimos saw things inverted or as we see them. He gave one of them a pencil and paper while they were looking at a white bear, and asked him to draw an outline image of the bear. The man did so and the explorer reported that the image drawn was an inverted one. Now, I insist that there was something wrong either with the Eskimo or the explorer. In spite of the criticisms of the views I published some years ago, I hold yet to that theory.

DR. A. B. HALE, Chicago—I did not want to lead the Section into a discussion of the psychology of the retinal image. All I assume is that the retinal image is an inverted one that is transferred to the brain which reproduces it. If Dr. Savage will think a moment he will see that these images are not what the man saw, but copies of what he remembers he saw. The explorer Dr. Savage refers to was probably Dr. Cook, who found that the Eskimos used picture books and such things upside down, even the children; in other words, they were a primitive people and had not been trained to see things as we are. Dr. Cook was not at all satisfied with the picture of the bear. If Dr. Savage will study Stratton's paper he will find an interesting work on the question of the acquisition of the sense of direction.

DR. ARTHUR SWEENEY, St. Paul—It is apparent to any one who looks seriously into the subject of mirror-writing that it is not confined to those who are mentally weak, but is found in considerable proportion among those of normally developed intellects. I have among my friends found several who wrote mirror-writing while at school, although right-handed. Others, who invert the paper when writing or who turn it sideways, drop into mirror-writing when compelled to write with the paper in the usual position. The subject has heretofore been considered mainly from the standpoint of mechanical ease, rather than as a perceptive defect. The theories of Erlenmeyer and others who have accounted for the phenomenon on the basis of facility of muscular movement have hitherto been accepted as settling the question. I am glad to see that Dr. Kuh has not been misled by this attractive but faulty hypothesis. The phenomenon is essentially dependent on failure of the mind properly to perceive the position of objects in space. The retinal image is an inverted one, and is transposed by the association of impression coming from the perception of light, ocular movement and the knowledge acquired by the sense of touch. Any influence that prevents the proper association of these three factors interferes with the transposition of the retinal image. The eye is in constant motion. If it was still, only a limited number of rays would fall upon the yellow spot. When we look at an object however small, it is necessary, in order to perceive its length, breadth and other relations, that the eye should be moved so as to bring the rays in succession upon the yellow spot. This movement of the eye is slight except when the objects are large or near. This ocular movement is, in my opinion, the most easily disturbed factor in the transposition of the image. It is a purely reflex act, instinctive in character. In the case of Hilda Olson, reported by me a year ago, who had complete inverted vision, there was an astigmatic hypermetropia of 2.5 degrees. This necessitated a flattening of the eye at each accommodative effort, and as two reflexes can not co-exist, the stronger one suppressed the weaker, so that the reflex of ocular movement, so necessary a factor in the transposition of the retinal image, was not operative. The correction of the hypermetropia by glasses gave her normal perception of the position of objects in space. I am glad to see that Dr. Kuh has recognized the purely perceptive nature of the defect, and that it is really a failure of co-ordination of impressions that is at the root of this most curious and interesting phenomenon.

DR. RICHARD DEWEY, Wauwatosa, Wis.—I am induced to speak of certain phenomena that I am reminded of as having occurred in my own experience which will possibly add force to what has been said regarding the importance of co-ordinate action of the brain in the reception of an impression. Any one who has given this question much thought must have reached the conclusion that there is something in the condition of the brain itself in receiving impressions, whether they relate to the tactile, visual or any other sense. My personal experience has convinced me that in order to receive an impression, there must be a certain preparedness on the part of the brain for its reception. For example, I have sat at the table with a glass of water and another of milk before me, and unconsciously taken a taste of one liquid instead of the other. This gave a strange perception of something that was neither milk nor water, and it was only explained when I found that I had taken something into my mouth under the impression that it was a different thing. I recall another example of this mental confusion. In passing from a room into a hall where I expected to find a window I found instead a blank wall, and this gave rise to a momentary period of confusion in my mind, because I saw something that was not what I had expected to see, and it took an instant for the eye and brain to adjust itself to the fact.

DR. HERMAN GASSER, Platteville, Wis.—The correction by glasses in the case referred to by Dr. Sweeney makes it evident that there is no such thing as inverted or perpendicular images. "Thinking is pushing and pulling." Every ray of light that falls upon the retina causes a chemical reaction, with a transformation of its energy into nervous energy, and then is transmitted by the optic nerve to the visual center in the brain by modes of motion. When these impressions are received unphysiologically or incorrectly, the result of habit or error of refraction, they are carried thus to the cortical brain and adjusted to all the other senses of touch, hearing, etc., into the conscious existence which we call mind. That is why there is no such thing as an inverted mental image. It is simply the way we receive certain impressions. The normal or abnormal images are the result of the adjustment of the forces of the outer world as we perceive them with their definite relations by our sensory apparatus and build them into ideal states of mental existence. The mental image and the "image" or reality outside that gave it existence are entirely distinct. This is why if our sensifacient apparatus is not normal we may have what we call abnormal and "inverted" images, but that appear as normal to the individual as was observed in the case where the glasses corrected the error of refraction and it at once was observed in what we term the normal relation.

DR. SYDNEY KUH, in reply—I think Dr. Sweeney and I agree that this is a disturbance of co-ordination. That is the important factor, but such a disturbance of co-ordination may be due to a variety of causes. If any one of the factors that

take part in the formation of a mental image is disturbed, a faulty mental image must of course result. One of the possible factors of this kind is a defect of the ocular movements. The fact remains that not in a single one of the cases of mirror-writing occurring in hemiplegics coming under my observation was there the slightest disturbance of the ocular movements. I do not think that a disturbance of the ocular movements is of any greater importance than a disturbance of any other organ that assists us in forming a mental image.

SCHOOL MEDICAL INSPECTION IN CHICAGO.

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That school medical inspection is at last receiving the merited attention of enlightened school boards and health officers in our larger cities argues well for its future, and adds additional luster to the fame of these medical pioneers who first introduced and championed its cause in humanity's interests. This great aid to prophylaxis was foreshadowed in those admirable German laws which went into effect July 14, 1884, by the adoption of the Prussian Circular to the Royal Governors of Provinces, which concerns the closing of schools in the event of the occurrence of infectious diseases. The diseases and the laws pertaining to them are classified as follows:

1.—*a*. Cholera, dysentery, measles, rubella, scarlet fever, diphtheria, smallpox, typus, relapsing fever, cerebrospinal meningitis; *b*, typhoid fever, contagious inflammation of the eyes, itch and pertussis (while spasmodic).

2. Children suffering from these diseases are to be excluded from school.

3. Healthy children living in same house in which cases named in 1 exist—Exception: it must then be certified by a physician that the school child is protected from danger of infection by proper separation.

4. Children excluded from school for said causes may be readmitted only after the danger of infection has been removed according to a physician's certificate or the usual duration of the disease has expired. This, in the case of scarlet fever and smallpox, is 6 weeks, and for measles and rubella four weeks, from its inception. Regard must be paid to the thorough cleansing of the child's person and clothing before readmission to school.

5. For the observance of orders 2 and 4 the principal or headmaster is made responsible. An immediate report of the exclusion of a child from school on account of an infectious disease must always be made to the local police authorities.

6. Refers to isolation of children attending boarding school when an epidemic occurs. It requires a physician's certificate to release them from quarantine, which he will give only when convinced that the danger of spreading disease is past and all precautions have been observed.

7. When any person living in the school house falls sick of one of the infectious diseases named in 1, or if a case should occur in the household of a school teacher, said case must be reported to the principal and to the police authorities, when proper steps must be taken to isolate the infectious case.

8. When several cases of infectious diseases, as in 1, appear in the locality where the school is situated, the principal and teachers must direct their especial attention to the purification of the school property, to the thorough airing of the class rooms. In particular must the school rooms and sanitaries be carefully cleansed each day. School rooms are to be aired continuously when not in use and the sanitaries must be regularly disinfected according to the regulations of the district police authorities. This rule applies to boarding schools and in them is extended to include dwelling rooms, work rooms and bedrooms of the pupils.

9. School rooms and entire schools where infectious diseases appear in epidemic form must be closed when the district physician advises.

10. Reopening is permissible only after thorough previous cleansing and disinfecting of the premises and on the advice of the district physician.

11. These laws apply as well to parochial and private schools, orphanages, asylums, day missions, and kindergartens.

The foregoing laws, admirable in their way, have furnished the basis upon which most of our state and municipal bodies have founded their regulations appertaining to the same subject. They, however, fall short of the ideal, inasmuch as they do not provide for systematic daily medical inspection, and, to remedy this defect, the practical American rises to the occasion and medical inspection of schools is born.

The first attempt at this work was made in the parochial schools of Philadelphia in 1889, but was discontinued on account of parental objection. To Dr. S. H. Durgin, of Boston, is due the credit of the first victory in this field. Beginning to agitate the question in 1890, he encountered much opposition, but, aided by Dr. C. M. Green, a member of the School Board, he succeeded in overcoming it. Following a serious epidemic of diphtheria he induced the board to sanction medical inspection as a regular department of school life. His important victory dates from Nov. 1, 1894. From that date to Oct. 31, 1896, there were individual examinations of 23,207 pupils, disclosing 6,571 cases of major and minor ills. Of them 5818 were ill enough to be sent home, many of them suffering from markedly contagious or infectious diseases.

The importance of the work is also emphasized when the total school population of Boston at that time is considered. The figures show the presence of 71,495 pupils in the public schools and 11,808 in parochial schools. Roughly then, 10 per cent. of these pupils required medical inspection, and it need scarcely be said that many cases of infectious diseases were thus promptly isolated, to the material benefit of the pupils in normal health.

Attracted by the excellent results shown in Boston, Dr. Charles F. Roberts, Sanitary Superintendent of the New York Bureau of Health, in October, 1896, sent a recommendation to that body urging systematic daily examination of the school children by medical inspection of the Health Department, and, although preliminary investigation proved the immediate necessity for such work beyond the shadow of a doubt, the work was not regularly instituted until March, 1898. Thereafter in three months 63,812 children were examined by the inspectors, and of these 4,183 were excluded on account of contagious diseases.

About the same time the Chicago Health Department, through its regular medical inspectors, working on notification of infectious diseases, received by the department from physicians attending the patients, during four months, visited 233 public schools, locating 1417 cases of diphtheria and 306 of scarlet fever. Despite the urgent demand for such work, it was not until Dr. W. S. Christopher was appointed as a member of the School Board that that body acted upon the recommendations of the Health Department. A corps of fifty medical inspectors was appointed by competitive examination under Civil Service rules, and Jan. 8, 1900, the work was begun. From that date to April 12, 1900, the inspectors examined 76,805 pupils, the school population at that time numbering 200,000. Of these 4539 were found suffering from contagious diseases and excluded from school. Resuming September 17, the work was continued until November 8; it was resumed again

from January 8 to March 1, 1901, and during this time examinations to the number of 56,562 were conducted, the exclusions numbering 3398. Following are the figures of the Chicago Health Department covering diphtheria and scarlet fever for the year preceding medical inspection of schools and the first year under such inspection:

	1899				1900			
	DIPTHERIA.		SCARLET FEVER.		DIPHTHERIA.		SCARLET FEVER.	
	Cases.	Dths.	Cases.	Dths.	Cases.	Dths.	Cases.	Dths.
Jan.	381	82	306	26	572	111	805	48
Feb.	307	62	377	41	362	88	505	47
March.. .	284	55	522	68	315	82	435	21
April ...	240	56	507	71	229	67	303	19
May	266	55	512	68	230	58	338	26
June ...	248	63	370	43	211	58	207	18
July	174	47	269	20	158	41	142	10
Aug. ...	235	60	256	28	103	33	92	2
Sept. ...	241	75	327	31	187	42	107	4
Oct.	489	93	747	35	306	79	160	13
Nov.	608	92	888	53	317	72	170	6
Dec.	458	103	719	49	313	66	211	12
Total.	3931	843	5800	533	3303	797	3475	226

It is thus seen that a decrease in the number of diphtheria cases was 628 for the year, with 46 fewer deaths. In scarlet fever the decrease in cases was 2325, with 307 fewer deaths.

These figures make even a better showing when it is considered that physicians as a rule were more careful in 1900 to report cases of this nature to the Health Department than in previous years, and the rapid growth of Chicago must also be taken into consideration. These facts add much to the excellent results shown in the foregoing table.

Viewed from the point of the economist, preventive medicine adds vastly to the wealth of the nation. Placing the low figure of $1000 on the economic value of a human life, properly conducted medical inspection adds many hundred lives to the credit side of the nation's ledger every year, and thus proves one of the most profitable fields in which preventive medicine finds its work. At the same time the fact that it may be the saving the life of a Hippocrates, a Michael Angelo, a Wagner, a Robert Browning, a Morse, Edison, Lincoln or Gladstone should never be forgotten in estimating its potential value.

In Chicago during the early months of medical inspection of schools, some objection developed on the part of parents who did not understand its aim, but this gradually died out and now the vast majority of them are very much in favor of it. One instance of the good work done through medical inspection exerted much influence with thinking parents. This occurred during the winter of 1900-1901 at the D. S. Wentworth school. Four children of the G———— family—two boys and two girls—attended this school. The oldest child, a boy of 13, developed a sore throat. His parents, aided by the neighbors, made a diagnosis of "mumps." He was kept at home Tuesday and the remainder of the week, but not until Friday did they call a physician to see him. The boy was then moribund from malignant diphtheria, and died within 48 hours. His sister, aged 10, contracted the disease, but she recovered. The Board of Health was notified of the circumstances and immediately closed the three school rooms where the other children of the family had attended during the week. These rooms were then thoroughly disinfected and the throat of every child in each room examined. All suspicious throats had cultures made from them and the children were sent home pending announcement of the results. This thorough work was kept up for two weeks but no new cases were discovered, and, at the expiration of that time, the quarantine ceased. The foregoing is but one of many instances of a like nature where prompt and efficient medical inspection undoubtedly prevented the occurrence of an epidemic.

One of the most disagreeable duties of inspectors is to examine and exclude children afflicted with pediculi. One irate parent whose four children had been excluded from school kept after the writer for a month. During that time he complained to several members of the Board of Education, including its president. He also took the matter to the local alderman, alleging every reason but the right one as the cause of exclusion. These men took the matter up, but on learning the truth referred him back to his school principal and medical inspector. Finally he gave in and saw that his children had proper attention. They became models of cleanliness and were never again sent in for examination on that score.

In Chicago the branch of medical inspection is under the supervision of Mr. W. L. Bodine, Superintendent of Compulsory Education, to whom the medical inspectors are responsible for the proper discharge of their duties. A daily report of cases examined and excluded is mailed by each inspector at the close of his day's visits to Dr. Arthur R. Reynolds, Commissioner of Health, and a copy is sent him also for transmission to Superintendent Bodine. In case of emergency, such as an outbreak of smallpox, diphtheria or scarlet fever, inspectors telephone immediately to both departments and thus no time is lost in establishing efficient quarantine.

Following is a copy of the instructions to medical inspectors, under which Chicago medical inspectors work:

The pupils to be inspected will be referred to the inspector by the principal for two reasons: 1. Those who have been absent four or more consecutive days.

2. Those in the school whom the principal may suspect to be suffering from contagious diseases.

These two classes must be kept separate in the reports.

The inspection is to be made with reference to transmissible diseases only, and examination is to be made for the following diseases; scarlet fever, diphtheria, measles, roetheln smallpox, chicken-pox, tonsillitis, lice, ringworm, or other transmissible diseases of the skin and scalp, and transmissible diseases of the eye.

Scarlet fever cases must be excluded until desquamation has ceased.

Diphtheria cases must be excluded until throat culture shows the absence of the Klebs-Loeffler bacillus.

Severe tonsillitis cases must be excluded on the clinical evidence alone, and throat culture made for further diagnosis.

Cases presenting suspicious throats, but not definite evidence of disease clinically, must have throat cultures made, allowed to return to their classes until the culture has been examined, and only excluded in case the bacteriologic examination shows exclusion to be necessary.

In making throat examinations the wooden tongue depressors supplied must be used, to the exclusion of all other tongue depressors. *Each tongue depressor must be used only once.* Aseptic methods must be employed in all examinations.

If a child is excluded, brief but sufficient reason therefor must be written on the exclusion card.

Inspectors are forbidden to make any suggestions as to the treatment or management of pupils who are sick. *This is imperative.*

Unlike Boston and New York, Chicago, though fully alive to the value of medical inspection, has not as yet made sufficient provision for the permanent employment

of its entire corps of medical inspectors. The emolument is $50 per month and, to cover the ground properly, a man must devote his entire working morning to the service, i. e., from 9 a. m. to 12 m. When the appropriation runs low four-fifths of the inspectors are dismissed and an emergency corps representing the three major divisions of the city is selected from the eligible list. These inspectors do not make daily visits but respond to special calls from a school principal when in his opinion local conditions demand attention. This method does not, of course, compare with the regular daily visits of qualified physicians but seems to be the best that can be done by the School Board when financial stress is acute.

That feature of the Boston system relating to the discovery of infectious disease in the schoolroom, in which event the medical inspector orders the child sent home, reports the case to the Board of Health and follows the case home to see that it is properly isolated there, shows a defect in the Chicago system. When recovery is reported, in the former city, by the family physician, the inspector determines whether all danger of spreading the infection has ceased.

Another improvement might be adopted from the New York rules in this matter, viz., that provision requiring the principal or head teacher in charge to make weekly reports of the names and addresses of all absentees and, if absent on account of illness, naming the disease if possible. In Chicago such list might be handed to the local truant officer who has the right to enter the houses of all absentees, and he might then report his findings to the Commissioner of Health for further action.

Several years ago a New York paper suggested a valuable aid in preventing the spread of infection among school children, i. e., the separate wardrobe. This may be constructed of board, making each partition eight inches deep, or sufficiently large to separate the clothing of each child from that of his neighbor. A weekly cleansing or disinfecting of these wardrobes might be accomplished with but slight expense and most excellent results. This would prevent the spread of many parasitic skin diseases and minimize the spread of more formidable contagions.

Again, much better results might be had by enlisting the active co-operation of all the teachers in the work of detecting disease. This might be accomplished by printing and distributing a placard such as Dr. Meredith Young, Medical Inspector of Crewe, England, has originated for use in the local schools. It bears the caption: "Particulars of Certain Contagious and Infectious Diseases for the Guidance of School Teachers." A copy of this placard is hung in every schoolroom in the district. The diseases enumerated are divided into two classes, A and B. Those in class A include scarlatina, diphtheria, measles, rubella, mumps, pertussis, varicella, variola, and influenza. In class B are listed erysipelas, ringworm, diseases of scalp, scabies, and purulent conjunctivitis. When diseases enumerated in the former class occur, all children living in the same house are excluded from school; in case of those in the second, class B, the exclusion of the actual sufferer alone is insisted upon.

In conclusion, one of the great aims of modern medicine is prevention; for it is written "An ounce of prevention is worth a pound of cure." And it is the endeavor of the Medical Inspector of Schools to live up to this adage. That he is doing so is acknowledged by all those who have given the matter thought, and when the history of Preventive Medicine, as practiced in the twentieth century is written, posterity will undoubtedly award a high place to the daily medical inspection of schools.

TWO DIFFERENT WAYS IN WHICH YELLOW FEVER MAY BE TRANSMITTED BY THE CULEX MOSQUITO—STEGOMYIA TAENIATA.

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HAVANA, CUBA.

Had it been known in 1881 when I reported my first inoculations with contaminated mosquitoes, that eight or ten drops of blood from a yellow fever patient injected under the skin of a non-immune would almost surely produce an attack of the disease, as Dr. Reed and his colleagues have now clearly proved, my discovery of the transmission through the bite of the culex mosquito would have been considered quite plausible.

My experiments would have been taken up and repeated under more satisfactory conditions, the number of mosquitoes required in order to produce a characteristic reaction would have been ascertained, and, probably, twenty years of ignorance on that important subject would have been spared to the medical profession. Without stopping to discuss the nature of the specific germ, the bare knowledge of the fact that the prick of a needle, previously moistened with the lymph of a smallpox or varioloid vesicle, suffices to produce an attack of variola, would have induced my colleagues to interpret my experimental results in accordance with my own ideas. After the infecting bite upon a yellow fever patient some of the germs contained in the blood are likely to remain attached to the parts constituting the sucking apparatus of the insect, so that when the same mosquito is allowed, two or three days later, to bite a non-immune the said germs may be deposited along the track of the wound or washed down into the wounded capillary vessel by the saliva or venom which is usually discharged during the biting and sucking operation. I had at first experienced some difficulty in fitting this interpretation to an essential condition stipulated in my "mosquito theory," namely, that the insect which should transmit the disease must belong to a particular species, different from those normally found in countries and seasons where and when the disease does not appear to be transmissible. I have thought, however, that the salivary secretion of the culex mosquito may possess special conditions enabling the yellow fever germs retained upon the sting to preserve their vitality, perhaps to sporulate, during the interval of days which must elapse between two successive bites. There must be a limit, however, to this anomalous vitality of the germ, which probably may not be prolonged beyond four or five days. This would account for the circumstance that I had never obtained any pathogenic reaction, nor any evidence of subsequent immunity, with my inoculations during the winter season, when the mosquito requires a longer time to digest its feed of blood and often will not bite a second time before a lapse of four, five or six days. My technique was a very simple one. The mosquitoes were caught in my own dwelling, at a time when no cases of yellow fever were supposed to exist in the neighborhood, and after having ascertained by their bright markings and general appearance that they were young insects, probably not more than a few days old, each was confined in a small phial or test-tube

without food or water. The insects were then taken to one of our hospitals and the yellow fever cases carefully examined until one with severe symptoms could be found, not farther advanced than the sixth day (usually on the third, fourth, fifth or sixth) of the attack. The mosquito was then made to fill itself with the blood of the patient, and left to digest its feed of blood, imprisoned within the same phial. In the ordinary course of events, in summer, the insect would be ready for another bite after the lapse of 48 to 60 hours; on some occasions, it would then be made to bite a second yellow fever patient, in which case another interval of days would have to be allowed before applying the contaminated mosquito to a non-immune.

I have carried out the above procedure, in collaboration with Dr. Claudio Delgado, upon 102 non-immunes in the course of 17 years (1881 to 1898). In 17 of the inoculated persons some febrile reaction occurred after a number of days varying between five and seventeen, in 14 of them, and as late as the 22d, 23d and 25th in the 3 others. The reaction consisted in a mild albuminuric attack of yellow fever in 2; in a distinct non-albuminuric attack of the disease in 6; in an abortive attack, with or without traces of albuminuria, in 3; and only an ephemeral fever, of doubtful diagnosis, in 6. Of these 17, two of the 6 who had experienced only ephemeral reactions showed no immunity at all, having been attacked with severe yellow fever in the course of the same year or the next; of the 3 with abortive reactions, one had another attack of the same character two years later; of the 6 who had developed a non-albuminuric yellow fever after their inoculation, one went through another attack of the same type a few months later, on severe exposure, a fatal case having occurred in the room next to the one which he occupied; neither of the two who had presented a mild albuminuric attack after the inoculation ever experienced any subsequent attack of the disease.

Nearly all our inoculations were performed upon persons who had come to stay several years in Cuba; only 10 of the 102 left the island before having completed their fourth year, the rest lived from four to twelve years in Havana (a few spent part of that time in Cienfuegos or Matanzas). Only 4 of the total number (less than 4 per cent.) died of yellow fever; 2 of them five and eight months after their inoculations, the 2 others after five and six years; none of them had reacted after their inoculations. Among all the 102, during their entire residence on the island, independently of the attacks attributed to the inoculations, 4 had fatal hemogastric yellow fever, as previously stated; 19 had albuminuric yellow fever, mostly of a mild type, but 4 of them severe with some hemogastric tokens, all recovered; 17 had non-albuminuric yellow fever, and 9 had abortive yellow fever, including 2 who only developed a suspicious ephemeral fever. The remaining 53 never experienced any form of the natural yellow fever during the years which they spent in Cuba after their inoculations.

I had thought of two ways by which more decided experimental results would be obtained; one way was by applying several contaminated insects at a time; the other to consist in feeding the mosquito exclusively on sugar, during two or three weeks after they had bitten a yellow fever patient, and only applying them after the lapse of that time to a non-immune. From a careful study of Melier's famous report of the epidemics of St. Nazaire, in 1861, I had come to the conclusion that it was in consequence of conditions such as these that the contaminated mosquitoes which had sought shelter in the hold of the *Anne-Marie* during its trip to St. Nazaire, must have acquired the intense virulence which enabled them to inoculate with fatal yellow fever every person who entered the hold of the vessel after its arrival at that port. It was on these grounds that I wrote, in a paper dated December 31, 1891, the following words: "It is my belief that, while one or two stings from recently contaminated mosquitoes can only occasion in susceptible persons a mild attack or simply confer immunity without any pathogenic manifestations, a severe attack would result from a greater number of such stings and the same might occur in consequence of one single bite from a mosquito which had been fed exclusively on sweet juices during several days or weeks after its contamination, before being allowed to sting another person."

At that time I still attributed the increased virulence to the multiplication of the germs which had been retained within the sucking apparatus of the mosquito; but in 1898 I read before the Academy of Sciences of Havana a paper in which I suggested, as the reason why only the Culex mosquito, alone among its Cuban congeners, has the faculty of transmitting yellow fever, that it has a pathogenic susceptibility for the yellow fever infection which the other species have not; the infectious germs would multiply within the body of the insect and finally reach its salivary and venom glands, to be carried with the secretion of those glands into the track of the wound or into the capillary vessel entered by the sting when the mosquito attacked another victim.

The Military Yellow Fever Commission, presided over by Dr. Reed, was evidently unacquainted with the last mentioned developments of my mosquito theory when they undertook to investigate it in August and November, 1900, since it was exclusively from precedents recorded about the malaria germ that they were induced to adopt the second procedure which I have outlined above. They have proved conclusively the surest way of obtaining a distinct experimental attack of yellow fever is by proceeding in the following manner: The mosquito *must* be applied to the yellow fever patient within the first three days of the attack; the insect is thereafter to be comfortably quartered in a good-sized jar, provided with sugar and a small cup containing water, in which it may moisten its proboscis and obtain facilities for laying its eggs. With such an arrangement the insect may be kept alive during seventy days or more, though a good many die long before that age. With mosquitoes treated in this manner Dr. Reed and his colleagues have tried to develop an experimental case by applying them to non-immunes five, six, eight and ten days after those insects had bitten the yellow fever patients, but they have invariably failed to obtain any positive results under these conditions, while they have succeeded in a large majority of their attempts when the application of those same insects had been delayed until twelve, sixteen or more days after their contamination. From these results Dr. Reed and his colleagues conclude that the yellow fever germ must be a parasite similar to that of malaria, and that, after parting from its human host, it must go through a series of transformations during the mosquito phase of its existence, requiring at least twelve days for their completion, before it can be in a condition to reproduce the disease. As a corollary to this proposition they believe that my previous experimental attempts must have been failures or errors of interpretation, since they are supposed to have been obtained with mosquitoes contaminated only a few days before the inoculation; they also claim that their point has been experimentally dem-

onstrated by the fact that their mosquitoes, when applied from five to ten days after their contamination, have invariably given negative results. The investigators thought, no doubt, that by providing their contaminated insects with food and water, besides giving them the benefit of several additional days since their contamination, they were actually improving upon my original technique; their argument being that since their inoculations had failed, even with those improvements, it was incredible that I should have succeeded in any of my attempts with my simpler method.

It has, apparently, not occurred to those able investigators while criticising my former experiences, to consider a fact which they have themselves demonstrated, namely, that there are two different ways by which the specific germs of yellow fever may be conveyed from the sick to the healthy. One way consists, as I infer from their experiments, in allowing the yellow fever mosquito to become infected in such a manner that, after the lapse of a certain number of days, the salivary and venom glands of the insect appear to become the seat of a local, chronic, lifelong infection, which is attended with a constant reproduction of yellow fever germs, so that the contaminated mosquito will thereafter inoculate some of those germs with every bite. The other way consists in injecting the germs contained in the blood of a yellow fever patient directly under the skin of a non-immune. I am not aware that any attempts have been made to determine the length of time during which the specific germs in the blood may retain their vitality within the glass cylinder of the hypodermic syringe or in any other receptacle,[1] but it stands to reason that they will survive more readily within the blood-sucking apparatus of the yellow fever mosquito, normally moistened with the insect's saliva, which admittedly constitutes the ideal culture medium for the yellow fever germ. Yet there must be a time limit beyond which the germs retained within the sucking apparatus must lose their vitality or perhaps undergo transformations which may temporarily deprive them of the power of reproducing the disease. During that limited time, under favorable circumstances, they may even sporulate and multiply as they might have done within the human host, but, on the other hand, it must be remembered that their position in the internal mouthpieces of the insect must be a precarious one, being at every moment liable to be washed out by a discharge of saliva or to be drawn into the stomach of the mosquito whenever food or water is sucked.

From these considerations it must be inferred that the bite of a yellow fever mosquito which has sucked the blood of a severe case is likely to prove infectious for non-immunes at two separate periods, namely, during the first few days after the insect has bitten the patient, provided that, in the meantime, the mosquito has not had access to any food or water, nor been allowed to bite another subject. After this short period the bite of the insect may be harmless until ten or fifteen days later, when the germs within the body of the insect will have had time to multiply and to invade its salivary apparatus.

The direct infection through the bite of recently contaminated mosquitoes, so far as I can judge from personal experience, produces much milder pathogenic effects, the fever is much less prone to develop albuminuria, and the period of incubation is often prolonged. I believe that after this mode of infection has been duly verified, and with certain improvements, including the employment of home-bred insects and the proper adjustment of the number of these necessary to secure visible pathogenic effects, it will be found to constitute the only method which may be safely used, upon a large scale, for the purpose of conferring immunity.

I certainly do not claim for my experimental results, obtained under difficulties and with considerable personal inconvenience, the significance and conclusiveness of the experiments so admirably carried out by the Military Commission at Camp Lazear; but, after the preceding explanations, every reader must admit that my method of inoculation has, so far, not been investigated by that commission, and that they are, therefore, in no position to pass judgment upon its merits before having done so.

160 Campanario Street.

1. Since writing the above, I have been informed of a recent experiment by Dr. Carroll, at Camp Columbia, showing that the blood of a mild experimental case of yellow fever, kept over night and part of the next day (some 14 hours) and injected to a non-immune has produced a mild but characteristic attack of the disease.

TREATMENT OF RINGWORM OF THE SCALP IN INSTITUTIONS.*

HENRY W. STELWAGON, M.D.
PHILADELPHIA.

The hospital or institution which escapes the misfortune of having to care for cases of ringworm of the scalp has much for which to be grateful. Many such cases occurring in private practice, among properly cared for children of good physique and robust health are, if the disease is at all recent, usually rapidly responsive to well-advised measures. Not so with hospital and institution cases. Even in private practice observation shows that in cases of any duration the disease is frequently rebellious and persistent, and that in many instances the practitioner pronounces the cases cured when the hair has begun to fill in in the affected area or areas; whereas, in reality the disease may still persist in a less conspicuous but chronic state, and the case remains an active center of contagion for other children. In almost all institutions in which children with this disease are admitted or in whom it may develop subsequently to admission, the subjects are almost invariably of poor stock, of impoverished nutrition, and have had, as a rule, the disease many months before coming under treatment. The consequence is that one has to deal with a persistent, rebellious and troublesome type scarcely known to the average practitioner, but an all too common experience with the specialist in skin diseases. With persevering treatment even the most of these cases may be made to yield in some months, or say within a period varying from several months to a year. Exceptionally a longer time is required for cases of great extent and of long duration. Without the methodical and persistent carrying-out of treatment, however, such cases last almost indefinitely—or till Nature begins to look after the cure as the child verges into puberty.

Ringworm of the scalp is in the larger number of cases due to the small-spored fungus, and, as a rule, it may be accepted as a fact that this fungus is the agent in most of the refractory cases. In a fair proportion of scalp cases, however, the disease is due to the large spore variety, and while such yield much more rapidly in most instances, still there are cases due to this variety of fungus which also prove persistently obstinate. Whichever fungus is the causative factor, the treatment

* Prepared for the St. Paul Session of the American Medical Association, in the Section on Cutaneous Medicine and Surgery.

remains the same. As yet we know that the recognition of the fungus variety has a bearing simply upon the prognosis as regards the probable time for a cure.

Strong remedies must, as a rule, always be used in the treatment of scalp ringworm in institutions. There are cases, it is true, in which the inflammatory element is, at first at least, quite marked, and milder applications are usually demanded. In such cases, indeed, this inflammatory element may be said to be a natural attempt toward casting off the disease. In almost all cases, sooner or later, however, the strong remedies are to be prescribed. What are they? In a great measure, one might say that the selection depends upon the habit or the prejudice of the prescriber. Still there is considerable unanimity among those having to do with these chronic cases as to the several remedies possessing greatest value. My own experience emphasizes the usefulness of sulphur, naphthol, iodin, chrysarobin and croton oil. Sulphur and naphthol are most valuable and appropriate for those cases involving a greater part of the scalp. Chrysarobin and iodin for circumscribed areas, and croton oil for those patches which have persistently failed to yield to other remedies.

There are certain adjuvant measures which should be mentioned first, before taking up the manner of application of the above several remedies. First, the hair of the entire scalp should be kept clipped very short, about one-fourth to a half inch in length. The disease is then more easily watched, and any new spots detected in their incipiency and promptly treated. In extensive and extremely obstinate cases it is even desirable to have the scalp shaved every five or six days. The spread of the disease to other parts of the scalp and to other children should be prevented by certain routine measures. With this object in view, the scalp is to be washed daily or every second day with warm water and medicated sapo viridis:

℞. Sulphuris præcipitat. 3i
Naphthol ..... gr. xxx
Saponis viridis ..... ℥i M.

The lather should be permitted to remain on for five to ten minutes, as it has in itself, as experimentally shown by Thin, an inhibitory or destructive influence upon the fungus which may be scattered about the parts. If there is fear of taking cold, the scalp may be enveloped with some covering. The lather is thoroughly rinsed off, the parts rubbed dry, and then a general remedial application made, chiefly for the purpose of prevention, to the entire scalp. The following is useful for this purpose:

℞. Sulphuris præcipitat. 3i
Naphthol ..... gr. xxx
Petrolati ..... ℥i M.

Or, instead of the salve, a lotion may be used for this general application, consisting of:

℞. Acid. carbol. 3ii
Resorcin 3i
Solut. acidi boric. (saturat.) ..... Oi M.

It is possible that the salve is more effectual in preventing the dissemination of the spores, although it is not so agreeable.

A word as to depilation of the affected areas. This is a measure of some importance, if carefully and repeatedly done, but if the disease is at all extensive or the patient very young, it becomes almost impracticable. As an efficient substitute for this, originally suggested, I believe, by Dr. A. W. Brayton, and in my judgment of superior value, and also possessing therapeutic properties of its own, I can cordially recommend a good depilatory powder. The following, if properly and freshly prepared of good materials, will answer the purpose:

℞. Barii sulphidi 3iii
Zinci oxidi
Amyli pulv. āā ..... 3iiss M.

At the time of application enough water is added to this mixed powder to make a paste, which is spread in a layer of the thickness of the back of a table knife on the areas, slightly overlapping the edges; this to remain on for three to fifteen minutes, according to the character of the hair and the sensitiveness of the skin; or until heat of the skin or a burning sensation is felt. It is then thoroughly washed off, and if it has acted as it should, the hair of the patch, including the stumps, will have been destroyed deep into the follicles, and possibly to the full depth of the latter. Should there be accidentally much irritation from this, a soothing ointment may be applied for a few hours or a day; as a rule this is never necessary. The depilatory should be applied every five to ten days, depending upon the rapidity of the regrowth.

As to the remedial applications to the individual areas, the same ointment as above, with double the quantity of sulphur and naphthol, will prove valuable in recent cases and especially in very young subjects. The following is the formula:

℞. Sulphuris præcipit. 3ii
Naphthol ..... gr. xxx-lx
Petrolati ..... ℥i M.

Occasionally the larger amount of naphthol, in those of extremely sensitive skin, gives rise to a feeling of considerable burning, and in such cases this ingredient can be reduced in quantity. As a rule, however, the feeling of burning is over in a few minutes, and no active irritation follows. Ordinarily, the best application for the areas in young patients and in recent areas is iodin tincture, containing a small quantity of mercuric iodid.

℞. Hydrarg. iodid, rubri ..... gr. i-iii
Tinct. iodini ..... ℥i M.

I am convinced that the value of iodin tincture applications in this disease is much underrated. The preparation is painted on twice daily, two or three coatings at each time, till the parts become somewhat tender or till the film thus formed cracks or begins to loosen. The parts are then anointed with the milder of the above salves, and as soon as the film is detachable it is picked or pulled off. If there is active underlying irritation, which is rarely the case, a mild ointment may be applied for a day or so. According to circumstances as indicated above, the depilatory powder is again used, and the paintings resumed. This is continued till the new growing hairs show no evidence of fungus, and then the treatment is discontinued, and the patient kept carefully under observation for several weeks. Should signs of the disease again present—if necessary their significance should be confirmed by the microscope—the paintings are again resumed. Or, if the iodin painting seemed to be slow in bringing about a complete cure, another plan is to be instituted.

Chrysarobin is by far the most valuable application in most of the hospital cases. It must be of the first quality. It is made by various manufacturing chemists and varies considerably in quality; naturally an efficient preparation is essential for success. It may be used in all cases, but must be employed with greater care in patients under the age of three years. In most of the younger patients in fact the sulphur naphthol salve or the iodin paintings will suffice to bring about a cure.

Chrysarobin is most satisfactorily applied as a solution in chloroform:

℞ Chrysarobini ..... q. s.
Chloroformi ..... ℥i

M. Make a saturated solution.

The areas are painted over with this till well coated with a film of chrysarobin, the chloroform rapidly evaporating. Over this is then painted three or four layers of good collodion. The plain collodion is a little too brittle, and the flexible collodion scarcely compressible enough; a mixture of equal parts is more satisfactory. In eight or ten hours the collodion is again applied. No further application is to be made till the film so formed begins to crack or break way or begins to loosen, which it usually does in two to four or five days. It is usually loosened by the growing hairs beneath. As soon as it becomes detachable it is gently pulled off, and if there is any active irritation beneath, a mild ointment may be used for a few hours or a day, till this is subdued. If there is any sign of stumps or growing hairs, the depilatory is again to be used, and the paintings with the chrysarobin and collodion resumed. This plan is to be continued, as with the plan with the iodin paintings, till the disease is finally cured. In some instances, but if used with care not in many, a mild or moderately severe dermatis of the surrounding skin may be set up, and under these circumstances it becomes necessary to suspend the remedy temporarily. In rare instances this tendency to dermatitis may repeat itself, the skin of the patient being intolerant to chrysarobin, and it must be set aside and give place to another plan. Such idiosyncrasy is, however, rare. If the patient or attendant is careless, some of the chrysarobin may be carried to the face or eye and a temporary disturbance of these parts brought about. This rarely happens, however, with the chrysarobin treatment as here advised, as the remedy is kept covered with the collodion film. In addition, it is advisable to have the patient wear a lining of paper or other material in the hat, which will admit of frequent washing or destruction.

In some instances these several methods will fail to bring about a cure; or more frequently will cure most of the areas, but fail to make sufficient impression upon a few patches. It is just in such instances especially that croton oil has its particular field of usefulness, a plan of treatment warmly commended by Alder Smith. In those cases, too, in which there are throughout but two or three patches, and in which for various reasons a rapid cure is desired, recourse may be had to this application. It is a severe remedy, and the parts are made actively inflammatory. Indeed, the object in view is to bring about an artificial kerion—a somewhat boggy and pustular inflammation, which upon abatement usually results in the cure of the patch. In such cases as here mentioned the application is most valuable, and while it may in some instances destroy groups of a few follicles here and there in the areas thus treated, the subsequent growth of hair covers up these small points of baldness completely, so that this possibility is practically of no importance. The careless use of the remedy and the pushing of the inflammatory action beyond a reasonable limit would, of course, result in considerable follicular destruction, and should be guarded against. If carelessly used or its application be unnecessarily long continued, complete baldness of the area could result, but this has never occurred in my experience; and it seems to me that such disaster could only be from gross carelessness, or possibly from some idiosyncrasy of the patient's skin. The scalp will fortunately stand a good deal of even reckless treatment, and yet finally show but little trace of it. Croton oil is, however, a strong remedy, and must always be used with caution. For this reason it is never to be employed in very young children. The general scalp is to be looked after in the same manner as when other methods are used. With croton-oil applications the use of the depilatory may be omitted. At first it is desirable to apply the oil weakened with two or three parts of almond oil, and if it is found that no active inflammation arises, it should be applied stronger. In most cases the pure oil is required. It should be scantily used, as the oil seems to have a distinct tendency to spread beyond the part to which it is applied. It is to be applied two or three times daily, and to bring about the desired amount of inflammatory reaction usually two to six days are required. When it is possible to have poultices repeatedly applied, the oil applications may be discontinued as soon as slight swelling and minute pustulation present; the subsequent poulticing will bring about sufficiently pronounced inflammation. In most cases, however, I have continued the oil applications till this end was reached and then applied boric acid ointment till the inflammation subsided. This ointment or the mild sulphur naphthol ointment can then be used till the new hairs appear, and then all applications be discontinued; at the end of several days or a week the parts and new growing hairs are examined. If there are still signs of the disease the same method is to be repeated. One should be sure, however, that there is still disease there, before resuming the treatment. If the inflammatory action and pustulation have been of sufficiently high grade, a repetition is not usually necessary. If there are several patches to be treated, not more than one if a large one, or two if small, should be treated at one time with the oil. As soon, however, as the inflammation has subsided a new area can be attacked.

In some cases of scalp ringworm the disease is disseminated—disseminated ringworm of the scalp—consisting of scattered small-sized areas presenting five to ten diseased hair or hair stumps. Such cases can be treated by either of the three active methods—iodin paintings, chrysarobin or croton oil. If the spots are numerous the number should be brought down and then, if necessary for final cure, the oil be employed to the remaining areas. In such cases many of the areas yield readily with any good treatment, leaving behind six or more obstinate spots. In those instances of scalp ringworm in which the disease is so extensive as to practically involve the greater part of the scalp, presenting large and irregular areas, it is advisable to use the stronger sulphur naphthol ointment till the disease is reduced in extent. Or this plan can be used, and a small part treated with the iodin or chrysarobin paintings. Croton oil, if finally required, should be left till the disease is brought down to several circumscribed areas; it is never to be used in the beginning of treatment in these confluent cases, nor should it in fact be applied to an area more than two inches in diameter, at the very most.

The several plans here outlined can also be used with advantage in private practice and with intelligent patients of the dispensary class—in the latter excepting, however, the croton oil applications; this even with private cases must be used with caution, and its action daily inspected.

Cheifez reports the cure of two cases of dropsy by massage, applied for 12 to 15 minutes, 6 times in one case and 17 in the other. Massage is commenced at the feet and worked upward.

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YALE IN MEDICINE.

At the recent two-hundredth anniversary of the founding of Yale College medicine was represented, and most acceptably so, by Professor Welch of Baltimore, himself a Yale alumnus, who delivered an interesting and scholarly address on "The Relation of Yale to Medicine."[1] Naturally the address is of an historical character. It covers the ground as thoroughly as the time would permit and constitutes a valuable addition to the history of medicine in America. Yale is related to medicine through its medical school and also through those who, having received their general education there, "subsequently practiced the art or cultivated the science of medicine." The Yale medical school was not established until one hundred years after the foundation of the college, and Professor Welch sketches in an interesting manner the position and work of the Yale graduates of the eighteenth century who became physicians, and whose success indicates that they had been so trained in mind and character as to be fitted well for their work.

The long line of over 2300 physicians who have received their liberal or professional education at Yale College is headed by Jared Eliot of the class of 1706. Like many other physicians of his day, Jared Eliot combined the offices of clergyman and physician; "for forty years he never omitted preaching either at home or abroad, on the Lord's day," at the same time as he was "unquestionably the first physician of his day in Connecticut." Of the five medical signers of the Declaration of Independence, two were graduates of Yale, Oliver Wolcott, governor of Connecticut, and Lyman Hall, the first governor of the independent State of Georgia. Now that the organization of the state and local societies is being pushed with renewed vigor, the pioneer work of organization of the medical profession by the physicians of Connecticut, beginning with the oldest existing medical society in this country, namely, the Litchfield County Medical Society, founded in 1765, is of especial interest. The charter of the Connecticut Medical Society is a model one even now. In this important work of organization Yale men took a prominent part. According to Welch, the most valuable published contributions of the eighteenth century by Yale graduates did not emanate from a physician, but from Noah Webster of the class of 1778, whose epidemiological writings have a permanent value. His presentation of the theory of fever is also noteworthy.

In the early years of the nineteenth century the Medical Department was established under circumstances wholly unique in the history of medical schools, the initiative coming from the college, and a compact being entered in with the Connecticut Medical Society, whose charter gave it control of the medical education in the state. By the terms of the union the society agreed to share some of its chartered privileges with Yale College, and in 1810 the Medical Institution of Yale College was incorporated, the sixth medical school of the United States. Of the first faculty the most distinguished member was Nathan Smith, whose fame has steadily increased as his profound influence upon medical and surgical practice in this country has become fully recognized. His essays on typhus fever (typhoid fever) and on the Pathology and Treatment of Necrosis are both classical and far ahead of his time, the profession having slowly caught up with the views there advanced. A graduate of Harvard Medical School, much of his most important work was done in New Haven (1813-1829). Nathan Smith is one of the most attractive figures in the history of medicine in this country, and the profession in general should be made more generally familiar than at present with his life and work.

The Yale Medical Department has taken an important part in the movements to advance medical education, and the work of the Sheffield Scientific Schoool in organizing a distinctive, pre-medical biological course, constitutes one of the most important departures in the collegiate education of our physicians. The preparatory and research work of the Laboratory of Physiological Chemistry under Professor Chittenden long ago placed it among the best laboratories of its kind. Among the more than 2000 Yale physicians of the nineteenth century are many famous names, and "the graduates of Yale in the medical profession have contributed their full share to the making of the medical history of this country." The influence of the work of Professor Welch himself as a teacher and investigator entitles Yale to the gratitude and respect of the medical profession. Surely all will join with the medical sons of Yale in the hearty wish that the present meager endowment of its medical school soon may be increased so as to add still more than in the past to the usefulness and fame of this great university.

1. Yale Medical Journal, 1901, viii, 127-158.

THE PATHOGENESIS OF GASTRIC ULCER.

The marked chronicity and limitation to certain geographical regions no less than the peculiar conformation and obscure origin have maintained a singular interest in the so-called round or peptic ulcer of the stomach and duodenum.

In certain localities it is claimed that cases of this nature are increasing. Recent statistics from St. Thomas' Hospital, London, speak for such a condition there, and Greenough and Joslin, who in 1899 summar-

ized the cases of the Massachusetts General Hospital, concluded that gastric ulcer was observed with greater frequency in Boston than in some other large American cities. The importance to surgeons of gastric and duodenal ulcers of this type has increased with the perfected technic by means of which perforation may be successfully combated and various operations to cure or remove the ulcers have been attempted, but as yet with rather meager results.

However interesting these phases, it has been the method of origin of these ulcers that especially has attracted investigators. In animals, gastric ulcers have been repeatedly produced experimentally and sometimes unexpectedly.[1] They have been produced designedly by embolism of the gastric vessels, ligation of the radicles of the portal vein, irritation of the pneumogastric, injury of different parts of the nervous system, by trauma to the epigastric region, and in other manners. The ulcers formed experimentally have, however, failed to simulate "round ulcers" of the stomach; their course has been more acute, they have been multiple or have differed in other respects. The inability to produce round ulcers in animals has consequently not thrown any light upon the etiology of the lesions in man. Among the causes supposed to operate, antecedent localized injury or impaired nutrition and the digestive action of the gastric juice have occupied prominent places. Localized interference with the circulation, trauma, and the action of bacterial or non-bacterial toxins have been advanced to account for the preliminary injury; these explanations, however, omit to elucidate the marked preference of round ulcer for the pyloric region, its round or punched-out character, its extreme chronicity and the fact that it is usually solitary; as for the hyperchlorhydria theory of Riegel, it has been quite generally abandoned.

It seems that the final proof of at least one mode of genesis has been furnished by Yzeren.[2] By section of the vagus below the diaphragm, he was able to produce gastric ulcers in rabbits that were usually single, occurred in the pyloric region and lasted in some instances many months. As is well known, cervical vagotomy, although unilateral, jeopardizes the life of an animal, but Palow showed that with sections below the distribution to the important thoracic viscera, not only will the animal live, but the secretion of the gastric juice is not materially interfered with. In laparotomized rabbits and dogs, Yzeren studied the movements of the stomach, estimated its muscular tonus, the intragastric pressure, and the influence of the vagus upon these activities. He concluded that although there are inhibitory—sympathetic—fibers in the vagus, it is essentially motor. A few days after the vagotomy the stomach becomes smaller and harder; the pressure within the organ is greater and the muscles maintain a fairly continuous tonic contraction. In nine of twenty rabbits that were allowed to live more than two weeks after vagotomy, ulcers were demonstrated; in one animal the ulcer was found over nine months after vagotomy. In all cases the ulcers developed in the pyloric region on or near the lesser curvature; in all except one case the ulcer was single; in one rabbit death took place by perforation. Yzeren likens these ulcers to those of decubitus, as occur for example with chronic myelitis; in the stomach the pressure upon the vessels of certain regions is caused by tonic spasm of the musculature, this in turn results from the loss of the innervation of inhibitory fibers.

There are some attractive points to the theories of Yzeren; the election of certain sites is explained as well as the occasional development of gastric ulcer following severe attacks of vomiting; it is not unlikely that degenerative changes in the vagus in chlorosis might act as vagotomy does in animals. To account for gastric ulcers by muscular contraction is not altogether novel. for Talma in 1899 claimed that cramps in the stomach were in some way connected with gastric ulcer; others, too, have noticed this association. Yzeren has failed to notice the work of the Italian Saitta,[3] who obtained multiple ulcers in the stomachs of rabbits by bilateral vagotomy and administration of HCl.

New researches directed to the discovery of serious alterations of the vagi in chlorosis and other forms of anemia are needed, and these nerves should be thoroughly examined in cases of round ulcer that come to necropsy. The effect of such investigations as these upon the therapy of gastric ulcer can not be foretold; they will certainly lead to more intelligent treatment. Yzeren found that an extra-mucous slitting of the muscular coats in vagotomized rabbits was seldom followed by ulcer; and in man gastro-enterostomy is usually followed by healing of the ulcer.

1. See JOURNAL A. M. A., vol. xxxiii, p. 1366, Gastric Ulcers in the Course of Pneumococcus Septicemia of the Guinea-pig.
2. Zeitsch. für Klin. Med., 1901, xliii, 81.

THE PATHOLOGY OF BURNS.

Extensive burns of the surface of the body have a practical interest and have been the subject of much theoretical and experimental work. But in spite of extensive investigation there is still no unanimity of opinion as to the exact mode of death in many of these cases. The initial shock, broncho-pneumonia, secondary sepsis and hemorrhage from ulcer of the duodenum explain the fatal termination in some instances. Yet there still is lacking a clear understanding of the pathologic processes involved in many of these mysterious cases.

F. A. Hoffman[1] calls attention to the fact that while there has been much experiment and hypothesis concerning this subject there is still a remarkable lack of that which is the true groundwork of the whole matter, viz., a collection of good clinical histories and records of complete autopsies. With these thoughts in mind, M. Wilms,[2] of the surgical clinic of Leipzig, has worked on

1. Constitutional Diseases.
2. Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie. Band viii, Hefte 4 und 5.
3. Gaz. degli Ospedali (Milan), 1900, xxi, 599.

this subject largely from the clinical standpoint, and while his conclusions are not beyond criticism, as he himself admits, his work deserves more than passing notice, if for no other reason, because he proposes a simple therapeutic measure which he believes is of great value.

Wilms dismisses most of the theories already advanced to explain the phenomena of burns as wholly unsatisfactory. The nervous and reflex theory of Sonnenburg has no clinical support from an examination of blood pressure and vasomotor disturbances. Nor do clinical observations bear out the theory of wholesale destruction of red blood corpuscles. The hemoglobin quickly disappears from the urine and blood counts often show more than the normal number of erythrocytes to the cubic millimeter. Nor does he find confirmation of the theory that the remaining corpuscles are so injured as to be unable to perform their functions, or that the liver, spleen and kidney are seriously damaged by the destroyed or altered blood corpuscles. The kidneys may be incompetent, not so much through the absolute increase in the hemoglobin that mechanically obstructs them as through the poverty of the blood in plasma, a large amount being lost through the burned skin. In this way the kidneys are not flushed as they should be. Relative anuria may thus result. A nephritis may occur preceded, and followed, by an albumosuria. The albumose Wilms thinks is the cause of the nephritis with its albumin and casts. The lessened coagulability of the blood and the failure to find numerous thromboses make him question the theory that the blood-plates in cases of burns are greatly increased in number and lead to multiple thromboses.

As stated above, the loss of water, or rather plasma, from the blood is considerable where burns are extensive and not too deep. Of this the formation of blisters and the quickly soaked dressings give ample proof; and Wilms has by measurement of water ingested and water eliminated by the kidneys, shown that this loss of plasma is greater than one would suppose, greater even than in cholera, as Tappeiner[3] showed in 1881. The small amount of plasma in the vessels accounts for the relative richness of the blood in corpuscles and for the anuria. The blood, in a word, is concentrated. In order to avoid this condition as much as possible Wilms has given huge quantities of water, tea, coffee or light beer to his patients and, as he believes, with good results. The concentration of the blood is lessened, the kidneys are flushed and mechanical obstruction diminished, and with the increased amount of urine toxic substances are more rapidly eliminated.

That toxic substances may result from extensive burns and that their presence in the circulating blood may produce a deleterious effect has been often referred to by other writers. Wilms, from the finding of albumose in the urine, believes the toxic substance is a product of the destructive splitting up of albumin in the tissues in the immediate neighborhood of the burn, that this toxic material accounts for the fever, the pulse changes, the vomiting, the collapse, the nephritis. It is eliminated as albumose, though what preceding chemical changes take place is uncertain. This toxemia is found especially in burns of the third degree, where the skin is charred and leathery and exudation on the surface does not take place. In these two conditions of the blood—its poverty in plasma and its richness in toxic material—Wilms sees an explanation, or at least a partial explanation, of the phenomena of burns. His work is suggestive and should lead to more careful clinical observation, including examinations of the urine and of the blood. His treatment—the administration of large amounts of water by the mouth, rectum and under the skin—is harmless and appeals to one as having a rational basis.

3. Tappeiner: Centralbl. f. d. Med. Wissensch., 1881, Nos. 21 und 22.

A VISITOR'S OBSERVATIONS.

In the November issue of the *Practitioner* its editor, Dr. Malcolm Morris, records some of the impressions he received during his recent visit to this country as the Lane lecturer at the Cooper Medical College in San Francisco. He says some pleasant things about the earnestness he observed in the medical schools visited, especially mentioning the Cooper Medical College, the medical department of the University of California, the Johns Hopkins, and the colleges of Philadelphia and New York. He says: "A European observer feels that Professor Osler's dream that at the end of this century ardent Old World students may go to the other side 'a-o'er a brook,' seeking inspiration from great masters, may easily be fulfilled." He goes on to state that even at present they might do worse than go to the places mentioned, "for at all of them post-graduate instruction is to be had, which for quality, variety and excellence could scarcely be equaled in any European country." It is pleasant to thus have our good points appreciated by the intelligent foreigner, but it need not make us unduly elated. We can certainly show him a variety in our medical educational institutions and a few that the old world can not excel.

OHIO SOCIETY FOR PREVENTION OF TUBERCULOSIS.

Our news columns contain the announcement of the formation in Ohio of a state society for the prevention of tuberculosis. This is an encouraging sign. While health boards, medical societies and individual members of the medical profession have done much to limit the propagation of tuberculosis, such a society as this one in Ohio will be a big help in the work, from the fact that laymen of large political influence have been induced to take active part by assuming some of the important offices. The society is to be congratulated for having secured the coöperation of these gentlemen, not only because by this means the public at large will become interested, but also because to carry on the work of the society considerable money will be needed, which a purely medical society would not be able to obtain, working alone. So far as formulated, the plans of the society include the establishment of a state hospital for consumptives in whom there is a chance of cure, and the

isolation as far as possible of incurable cases in smaller hospitals in different parts of the state. If the plan can be carried out the greatest good can be accomplished. It is to be hoped that this action in Ohio will be followed by similar action in other states.

AMERICAN JOURNAL OF ANATOMY.

Among the many new journals that have been offered to the profession in this country during the last few years, none has appeared that is more deserving of high praise than the *American Journal of Anatomy*. The initial number, which has just been received, is another evidence of the high-class work that is now being done in this country in the less utilitarian departments of medical science. Activity in ultra-scientific medical work and investigation was never greater than at present, and American investigators are becoming as active and as numerous as are those in any European country. There are many indications that European scientific workers will soon be looking this way to find some of the best original work in the purely scientific as well as in the practical department of medicine and the appearance of this journal is one of them. The scientific contributions contained in it are of the highest order of merit, and its excellence from a mechanical point of view deserves the warmest praise. There has evidently been a determination not to see how cheap the journal could be put out, but how good it could be made. The illustrations are superb, and especially is this true of the plates. It will be published quarterly at five dollars per annum. We understand that a number of generous medical men have backed the enterprise with financial support, so that its future is guaranteed. But it is one of those enterprises that deserves the support of all who are interested in scientific medicine, whether their work lies in the particular branch which this journal represents or not. It is naturally only of direct interest to but few, but indirectly it is of interest and advantage to all who have the welfare of scientific medicine at heart. The editors are Professors Barker of the University of Chicago, Dwight of Harvard, Gage of Cornell, Huber of Michigan, Huntington of Columbia, Mall of Johns Hopkins, Minot of Harvard, and Piersol of the University of Pennsylvania. The list of those who have promised to contribute contains the names of representative men in the profession.

INTOXICATION WITH BISMUTH.

The general impression prevails that when symptoms of poisoning arise in connection with the administration of bismuth or its combinations the manifestations are due to the presence of impurities, the most important of which is thought to be arsenic. Evidence is not wanting, however, tending to show that uncontaminated bismuth may give rise to toxic effects, which in some respects resemble those due to lead and mercury. A number of such instances are cited in a brief communication by Dr. Dreesmann,[1] who also reports a case under his own observation. Thus, following the dressing of wounds and wound cavities with bismuth subnitrate and other preparations of bismuth, as well as the internal administration of large amounts, there has been observed in the urine a white precipitate, becoming black, together with albumin and tube casts, stomatitis, pain in and loosening of the teeth, a metallic taste, with a blue line on the gums, and dark discoloration of the tongue, diarrhea, and pigmentation and ulceration of the intestinal tract, especially the large bowel. It has been shown experimentally that pure bismuth introduced into the pleural or peritoneal cavity is capable of exciting adhesive inflammation, and even perforation. The case of Dr. Dreesmann occurred in a man 30 years old, who had been quite severely burned and was treated with local applications twice daily of a 10 per cent. ointment of bismuth subnitrate. In the course of three weeks a black sediment was noted in the urine. In the course of three weeks more marked stomatitis developed, with pain and difficulty in swallowing. The teeth became loose and a bluish-black line appeared at the margin of the gums. Similar discoloration appeared also on the tongue. An area of ulceration resulting from the burn also exhibited black pigmentation, which disappeared but gradually. The preparation employed was free from contamination, particularly lead, and the symptoms could be attributed only to the bismuth. Improvement ensued as soon as a boric acid ointment was substituted for that of bismuth. From all of the evidence it would thus appear that bismuth, both applied topically and administered internally, is susceptible of absorption, and capable of giving rise to toxic manifestations, consisting principally in irritation of the digestive and the urinary tract; accordingly, some care should be exercised in the employment of this useful drug, which is generally considered entirely innocuous.

1. Berliner Klin. Wochenschrift, 1901, No. 36, p. 94.

SEASICKNESS.

Seasickness is a distressing disorder from which a large proportion of the traveling public suffer; yet it hardly receives mention in works on practice. Its pathology is still a matter for discussion among medical authorities, and now come the naval architects with their theories of its causation. Any one who has had experience knows that steamers are much more conducive to this distressing ailment than sailing ships, and the difference is chiefly attributed to the lack of steadying effect of the wind and consequent unregulated rolling and generally exaggerated motor performance of the vessel. With the increase of size of ocean packets of late years, this cause ought to be somewhat restricted, but according to the scientific shipbuilders a new element is introduced. A long vessel is practically a vibratory bar with its nodes and loops, and the longer the ship and the greater the speed and power of the engines, the more pronounced is the vibration. When the engines of the ship in their action strike the proper note of the structure and work in unison, then it is that the vibrations are greatest, and though the vessel may be running through quiet seas, a score or more of the passengers before unaffected may have to succumb to the sickness of the sea. The seasickness in this case is, therefore, according to the explanation, an effect of a quasi-musical phenomenon; it is a pathologic discord of the

nervous and digestive systems with the vibratory note of the ship, or a special fatigue resulting from the rapid succession of minor shocks. It is aggravated, moreover, according to the naval architects, by the exaggeration of the movement of a spring mattress so that when recumbent the discomfort may be even increased. Heretofore we have not seen so much importance attributed to merely vibratory motion in the production of seasickness, and while it is possible that it may have its part, this is doubtful; still some persons are subject to "car sickness" in railroad travel which may be due to this cause, and similarly sensitive individuals would probably suffer in sea travel, all the more because with it would be combined the pitching and rolling movement that usually causes seasickness. To this latter we must still attribute the greater part of the victims, but the explanation above offered has still a certain interest though not valid for the majority.

MODERATE DRINKING AND TOTAL ABSTINENCE.

Dr. Dyce Duckworth has lately emitted some views in regard to alcoholic drinking, in an address before a congress of medical examiners at Amsterdam, that seem hardly to agree with the accepted views of life-insurance authorities in this country. He maintains that total abstinence is undesirable in an insurance point of view; in fact, that it would be better for everyone to indulge moderately to just the right amount. He admits that even a slight excess is harmful, and he would not advise the daily use of as much as, what he puts as the physiologic dose, two ounces of alcohol. Yet he believes alcohol to be a food and a valuable element in the daily diet. He also admits that total abstinence is better than any, even the least, misuse. Careless persons with unstable nervous systems and of lower animal nature may, he says, practice total abstinence, but sensible people who can control themselves need not; indeed, he goes further and says he believes that the lives of truly moderate drinkers of alcohol are probably on the whole better and more useful than those of abstainers. The weak point in his argument is that he offers nothing but his own authority for all he says, and bases his opinion only on his personal general observation and experience. There should be something more than this in view of the many careful observations, the contradictory experience of so many others, and the accurate experimental studies of such men as Kraepelin and others. To say that moderate drinkers lead better and more useful lives than total abstainers is a little strong, even admitting that some of the latter are cranky and extreme in their views. Insurance experience, in this country at least, does not prove that they are better lives in one sense. There seems to be a difficulty to the average man in walking in the straight and narrow way of moderate drinking that he advocates, and our insurance statistics show a rather better record as regards mortality for abstainers than for the other class. Dr. Duckworth evidently appreciates this weak point, for he says he offers no statistics to prove his contentions and has long since learned to distrust them. Actuaries' figures, however, will probably still continue to govern the policy of insurance companies rather than the personal views of even so eminent a practitioner as Sir Dyce Duckworth. One may reasonably doubt whether figures lie in this case.

UNJUSTIFIABLE DISTRUST IN DIPHTHERIA ANTITOXIN.

An extract from the "Weekly Bulletin" of the Chicago Health Department in the Medical News section of this issue shows that the worst forebodings of the JOURNAL[1] as to the serious and far-reaching results of the recent deplorable occurrence in St. Louis are being fully realized. An increase of one-third in the case mortality of diphtheria since the first of the month is attributed to a growing distrust of antitoxin. The medical inspectors and antitoxin administrators of the department report that parents refuse to allow the use of antitoxin unless the physician will pledge himself that the serum is perfectly pure and free from any danger of causing tetanus. Even then in many cases its use is positively forbidden. Fortunately, the department men are able to give such pledge unhesitatingly. All antitoxin used or distributed by the department is tested—not primarily for its freedom from any pathogenic properties, but for its antitoxic strength. Out of each instalment received in the laboratory 5 per cent. is tested on guinea-pigs previously injected with diphtheria toxin; if the animals survive without untoward symptoms or undue reaction the instalment is accepted as of the the antitoxic strength indicated on the label of the package. Obviously, if the serum contained the tetanus bacillus or other pathogenic germ, that fact would be developed in this test. No such result has ever followed during the six years' use of this remedy by the department, but on three occasions instalments have been rejected for failure of the indicated antitoxic strength. The test is so simple and so conclusive that the practice should be uniformly adopted. If necessary, legislation should be had forbidding the sale or use of any antitoxin not thus tested and certified by some competent authority. It is said above that "fortunately the department men are able" to pledge the purity of the serum they use. Unfortunately, this is not the case with the private physician, who, it is reported, very often shrugs his shoulders and replies to the anxious query of the parent: "I can not guarantee anything; you must take your chances!" Is not this a cowardly attitude for a medical man? Is it not his duty to know positively the properties and the qualities of the remedies he offers to use? He can guarantee this as well as any other remedy he uses, and should hold the producer responsible in this case as he does the druggist who puts up his prescriptions. The evidence so far given points to a fatal but avoidable mistake as a cause of the St. Louis tetanus cases, and the result will be all the greater care and greater safety in the manufacture and use of antitoxin hereafter. A 33 per cent. increase in the case mortality of such a tractable disease as diphtheria under the antitoxin treatment within less than three weeks is too serious a matter to be dismissed with a shrug of the shoulders. The baker's dozen of tetanus deaths in St. Louis sink into positive insignificance compared with the untold thousands of avoidable diphtheria deaths which will inev-

1. See pages 1255, 1323.

itably follow unless members of the medical profession demand a guaranteed purity of antitoxin and are thus enabled to speak with the confidence of definite knowledge and so inspire the anxious parent with their own confidence. The producers of antitoxin themselves, in their own interests, should lose no time in securing such a test and guarantee.

Medical News.

CONNECTICUT.

X-Ray Damages.—Dr. John Weldon, Willimantic, has recovered $6750 damages from a firm in Boston who sold him an *x*-ray machine from which he received a burn incapacitating him from work for twenty-two months.

Scarlet fever is reported to be prevalent in the towns around New Haven. The school at North Branford has been closed; Centerville has six cases, and twelve cases are reported in the Union Hill school district in Union City. Several cases are reported from Meriden.

Memorial to Dr. Hudson.—A special meeting of the Hartford Medical Society was held October 31 to take action on the death of Dr. William M. Hudson, vice-president of the Society. Addresses were made and a committee was appointed to draw up resolutions of respect for his memory.

FLORIDA.

Personal.—Dr. Ned C. Berry, formerly house surgeon in the Plant System Hospital, Sanford, has located in Kissimmee City.——Dr. Richard H. Gillen, De Land, has moved to Seattle, Wash.——Dr. O. S. Whipp, Braidentown, has moved to Clearwater.——Dr. Theodore Turnbull, Monticello, has moved to Jacksonville.

ILLINOIS.

Will County Medical Society met at Joliet, November 12. The address of the evening was delivered by Dr. E. C. Dudley, of Chicago, who reviewed the history and development of hysterectomy and myomectomy for uterine myoma.

Must be Vaccinated.—The Mt. Sterling Board of Health promulgated an order, November 12, that all persons be vaccinated. Those unable to pay will be vaccinated at the expense of the county, provided the fee does not exceed 25 cents.

City Wins Suit.—Du Quoin brought suit against Perry County for expenses incurred in caring for smallpox patients in the isolation hospital and elsewhere. The case went to the Supreme court, which has now decided in favor of the plaintiff.

Diphtheria.—Two schools in Greenwood township, Christian County, have been closed on account of the disease.——Joliet reports one case.——At St. Viateur's College, Bourbonnais Grove, three students are ill with the disease.——Rockford has two new cases.——Eight cases are reported from Cornell.

Personal.—Dr. Robert E. McClelland, Williamsville, who has been ill a long time, has secured Dr. Claude A. Lloyd, Chicago, to take charge of his practice.——Dr. Abraham L. Miller, Dixon, has been elected a member of the board of trustees of Carthage College.——Dr. Charles M. Galbraith, late surgeon of the 47th U. S. Volunteers, has returned from the Philippine Islands and will resume practice in Carbondale.

Smallpox.—Trouble has arisen in Springfield because the mayor has established an isolation hospital in Oak Ridge Park. Thirty cases in all have been reported in the city.——Grafton has the puzzling disease which looks like, but is said not to be, smallpox.——The prevalence of the disease at Hamilton, where 20 cases have been reported, has caused Nauvoo to issue a proclamation establishing a quarantine.——Strawn has several cases of the disease.——Peoria reports 15 cases, and Elverton and Athens have each one.

Chicago.

Smallpox.—During the past week four cases of smallpox have been discovered in the city.

Personal.—Dr. Charles Edward Manierre has returned to Chicago and resumed practice at 552 La Salle avenue.——Dr. F. H. Russell has located in Kewanee, Ill.

Norwegian Lutheran Hospital.—Contracts have been let for the construction of a hospital for the Norwegian Lutheran Deaconess Society, to comprise several buildings from one to three stories in height and to cost $40,000.

Contagious Disease Hospital.—Plans for a hospital where contagious and infectious diseases will be exclusively treated are on foot, and for the purpose of giving information and collecting funds an office has been opened in room 132 Hartford Building. A charter for such a hospital has already been obtained. The necessity for such an institution is urgent.

Influenza Threatens.—Although the mortality rate for last week was satisfactorily low—12.35 per 1000 of population—the outlook for the immediate future is not reassuring, says the Department of Health. Influenza threatens seriously; there was an increase of fully 30 per cent. in the finding of grip germs in the laboratory examinations. The presence of the pneumonia germ also markedly increased.

Distrust Antitoxin.—An increase of fully one-third in the number of deaths from diphtheria in proportion to the number of cases reported is noted during the past fortnight. The medical inspectors of the department report a distrust of the use of antitoxin, both by physicians and parents, which fully accounts for this result. Such distrust is, in the judgment of the Commissioner of Health, wholly unwarrantable. He says: "Probably never before in the history of antitoxin has this specific for diphtheria been so safe to use. The deplorable results in a neighboring city furnish no criterion of the method of antitoxin production in general, and the fact that more than 140,000 injections of the remedy distributed by this department during the past six years without a single such result should reassure those who have been needlessly alarmed."

INDIANA.

Smallpox has appeared at Lafayette, where two cases are reported, and at Castleton, where a small epidemic has occurred in which three patients have died.

Smallpox Risks.—The Secretary of the State Board of Health reports that the conditions all over the state indicate that there will be more smallpox than ever before and urges on the health authorities and the people the necessity of taking preventive measures at once.

Personal.—Dr. George D. Baily has purchased the interest of Daniel J. Mitchell in the Spiceland Sanatorium.——Dr. Cory R. Per Due, Etna Green, has sold his property to Dr. H. E. Crockett, Lafayette, and will move to New York City.——Dr. Oscar Heller, New Palestine, coroner of Hancock County, has resigned and Dr. Noble P. Howard, Jr., Greenfield, has been appointed to fill the vacancy.

Blacklist Debtors.—The Physicians' Protective Association of Elwood has prepared a blacklist, containing the names of families who have run bills with one physician, and when their credit was exhausted, called in another. The physicians will refuse to answer calls from any of them. Their laws are said to impose a fine of $5 on any physician who makes a professional call on a family on the blacklist, and a fine of $25 for the second offense. Every physician in the city is said to belong to the association.

IOWA.

Personal.—Dr. Edwin J. Moffitt, Jesup, has moved to Topeka, Kan., where he has a hospital appointment.——Dr. Charles E. Todd, Oskaloosa, has moved to Los Angeles, Cal.——Dr. Ridenour, Raymond, has located in Jesup.

Physician Found Guilty of Murder.—The proprietor of the Crofford Sanatorium, Leon, on November 16, was found guilty of murder in the second degree on account of his complicity in the death of an inmate of the institution.

Farewell Dinner to Dr. Sawyers.—The Centerville Medical Society gave a dinner, November 1, in honor of Dr. John L. Sawyers, who is about to leave the city. The address of the evening was given by Dr. Ephraim M. Reynolds. Resolutions were passed regretting the removal of Dr. Sawyers.

St. Luke's Medical Board.—The trustees of St. Luke's Hospital, Davenport, have selected the following medical board for the ensuing year: Attending staff, in surgery, Drs. William L. Allen, Henry U. Braunlich, and Richard W. Hill; in gynecology, Drs. J. P. Crawford and Alphons L. Hageboeck; in obstetrics, Drs. John A. De Armand and Edward F. Strohbehn; in medicine, Drs. Edward S. Bowman, George E. Decker, Frederick Lambach and Bernhard H. Schmidt; in nervous diseases, Dr. Jennie McCowen; in ophthalmology, Dr. Albert W. Elmer; in oto-laryngology, Drs. George W. Banning and Karl Vollmer. The consulting staff consists of Drs. William

D. Middleton, Lucius French, H. Matthey, Carl Matthey, J. W. H. Baker, and John H. Kulp.

KENTUCKY.

Typhoid fever is epidemic at Corrishville and Dugansville, Mercer County.

Smallpox.—Paducah has two cases.——Three cases have appeared in the Story's Branch neighborhood, Fleming County. ——All the schools in the neighborhood of Craigs and Foothill, Bath County, have been closed on account of the disease.

Diphtheria has broken out in severe form in the northeastern part of Mercer County. On account of the prevalence throughout the state, the State Board of Health has issued a circular on the prevention of the disease, addressed to health officials and the general public.

Personal.—Dr. Edward M. Green, Versailles, has been appointed to the staff of the Georgia Sanatorium for the Insane, Milledgeville.——Dr. Vaudois E. Handley, Sturgis, has decided to move to California.——Dr. Charles W. Aitkin, Flemingsburg, has located in Lexington.——Dr. George Jean, Danville, has passed the examination of the medical department of the Army, and is ordered to the Army Medical School at Washington, D. C.——Major W. W. Gray, surgeon, U. S. Army, has succeeded Major William O. Owen, as surgeon at Fort Thomas.

LOUISIANA.

Physicians Fined.—For failure to furnish vital reports to the health authorities as required by law, eighteen physicians and one midwife of Acadia were fined $5 each, November 11.

The New Orleans Polyclinic opened, November 4, with a good class. The great clinical advantages offered by the city, combined with the mild climate, make it a desirable place for the medical profession in winter.

Dr. Brickell Honored.—Dr. William E. Brickell, who has been physician to St. Vincent's Orphan Asylum, New Orleans, for twenty-five years, was tendered a tribute of love and appreciation in the shape of an entertainment at the institution, November 7, at the close of which he was presented with a silver smoking set.

Personal.—Dr. Arthur W. de Roaldes, founder of the Eye, Ear, Nose and Throat Hospital in New Orleans, who spent the summer in Europe, has returned.——Dr. Edmond Souchon, New Orleans, returned November 7, from a trip through Mexico.——Dr. Latzi L. Szabary, Third District, New Orleans, has leased the Beauregard place, and will reside in St. Bernard parish.——Dr. William Kohlmann, New Orleans, has been appointed surgeon to the Touro Infirmary, vice Dr. Frederick Loeber, Jr., deceased.

MARYLAND.

Dr. Albert C. Reuling, Baltimore, has returned from Europe.

Deaths in Baltimore.—There were 156 deaths in the week ended November 16; 14 were from pneumonia, 3 from diphtheria and 2 from typhoid fever.

An orthopedic department has been added to the City Hospital Dispensary, College of Physicians and Surgeons, and Dr. Albertus Cotton has been placed in charge of it.

The new training school for nurses at St. Joseph's Hospital, Baltimore, was opened November 11. Three years of study are required, with two lectures daily and instruction in the wards. The lectures are delivered by the hospital staff.

Dr. Howard A. Kelly gave a reception to the students of the Baltimore College of Dental Surgery November 11. The affair was in the interest of the Y. M. C. A., and the officers of the association were all present with about 100 students and other guests. Addresses were made by Dr. Kelly and Rev. John T. Stone.

Dr. Lesslie M. Sweetnam, Toronto, Ontario, is at the Johns Hopkins Hospital, being treated for blood poisoning. He scratched the fore-finger of his right hand in operating and it was feared that he would lose his right arm, but Dr. Halstead has tried conservative treatment and the case is progressing well.

Dr. Frank T. Shaw and family, Westminster, were poisoned November 16, by eating oysters which had been fried in a preparation of arsenic and cornmeal, made for rats and left in the pantry. The cook not knowing it contained arsenic used it in frying the oysters. Owing to the burning sensations produced, the family partook but sparingly of the repast and prompt vomiting prevented any fatal results.

MINNESOTA.

Addition to City Hospital.—A permit was secured, November 5, to erect an operating ampitheater, kitchen and laundry in connection with the City Hospital, Minneapolis, at a cost of $35,000.

Personal.—Dr. John B. McNerthney, Delavan, will locate in Tacoma.——Dr. Pence, late physician at the City Hospital, Stillwater, has been appointed assistant physician at the Fergus Falls State Hospital for the Insane.——Dr. Robert A. Campbell, formerly admitting physician at the City Hospital, Minneapolis, has been made resident physician at the institution.

Smallpox.—A member of a theatrical company was seized with smallpox at Luverne and the company is in quarantine in its special car.——The disease is reported at Langdon.—— Dr. Robert I. Hubert, St. Cloud, was indicted November 14 for "wrongfully, unlawfully, wilfully failing, neglecting and omitting to report contagious diseases of smallpox to the board of health."

Compulsory Four-Year Course.—The custom heretofore permitted at the State University, of allowing academic students who take a medical course after graduation, one year's credit on their medical course, has been changed, the State Board of Medical Examiners having refused to issue permit to practice to anyone who has not taken a four-year course in a medical school.

Safeguarding Against Blackmail.—Acting under advice from Attorney-General Douglas, Insurance Commissioner Dearth has ruled that, under the laws of Minnesota, general casualty indemnity companies may write contracts, insuring physicians against loss by reason of damage suits arising from the results of their practice upon patients. Such insurance is, however, invalid in case of an operation which is in itself illegal.

MISSOURI.

Personal.—Dr. W. S. Wheeler, Kansas City, has been appointed investigating physician for the Board of Health; salary $150 per month.——Dr. William H. Mook, St. Louis, has been appointed assistant physician at Quarantine.——Dr. W. A. Pendergraft, Elkland, who recently moved to Buffalo, has located in Marshfield.

Fatal Case of Hemophilia.—A case of hemophilia was admitted to the City Hospital, St. Louis, a few days ago and died of hemorrhages from the mucous membranes of the nose and mouth. Postmortem examination revealed general hemorrhages from the mucous membranes, with some increase in the lymphadenoid tissues of the abdominal cavities. A microscopic study of the small arterioles and capillaries is now being made.

Isolation Hospital at St. Joseph.—The Board of Health has introduced an ordinance providing for the immediate erection of a pesthouse at a cost of $1,500. It tacitly agreed to repeal all ordinances providing for public work that could possibly be dispensed with, the funds thus secured to be devoted to meeting Health Department expenses. It resolved to accept no smallpox patients from the county save on payment of $5 a day in advance for maintenance of each patient, in retaliation for the county's refusal to assist the city in erecting a pesthouse.

Coroner Condemns Health Department.—Coroner Funkhouser rendered a verdict November 18 which states: "We find that the decedents came to their death from tetanus, following administration of diphtheria antitoxin containing tetanus toxin, said diphtheria antitoxin having been prepared and issued by the Health Department of the City of St. Louis and bearing dates on labels of Aug. 24 and Sept. 30, 1901. The presence of tetanus toxin in the diphtheria antitoxin shows negligence upon the part of the Health Department in the preparation of said diphtheria antitoxin and in the issuance thereof."

Registration of the Tuberculous.—Much interest has been aroused in St. Louis on account of the proposed legislation regarding tuberculosis. The bill formulated by the Board of Health for action by the City Council classes tuberculosis among the contagious diseases and required that the Board be notified by the attending physician of each case. One section of the bill provides that at the request of any physician the Board shall have the authority to determine the existence of tuberculosis in a suspected case, and shall fumigate the dwelling of such a case once in ninety days if it is thought best. Fines are to be imposed upon physicans failing to report

cases. The St. Louis Medical Society unanimously condemned the bill, believing that the Board of Health should confine its efforts in this direction to educating the people and in making microscopic examinations of the sputum. The only return to the patient from making public his misfortune would be an occasional fumigation which can not be effective. It was asserted that if this measure prevailed it would prevent patients from seeking medical aid in the early stages and defeat the best efforts for limitation of the disease. Education as to cleanliness, thoroughness in the care of the sputum and the disinfection of the utensils used in eating and drinking are more effective than all the so-called disinfection by fumigation. The bill was permanently shelved by the City Council, November 12.

NEBRASKA.

New Licenses.—At its meeting, November 7, the State Board of Health issued certificates to 17 applicants for license to practice medicine in the state.

Wise Memorial Hospital.—This institution, established by a Jewish Society of Omaha, in memory of Rabbi Wise, was opened November 17. It will be conducted on non-sectarian lines and as many free beds as possible will be maintained. Its present capacity is 50 beds. The surgical staff consists of Drs. John E. Summers, August F. Jonas, Byron B. Davis, Charles C. Allison, and Millard Langfeld. The medical staff includes Drs. Oscar S. Hoffman, Paul H. Ludington, Willson O. Bridges, Charles Rosewater and a number of specialists.

Smallpox.—Up to November 7, the physicians throughout the state had reported 600 cases of smallpox.——It was announced that the death rate from the disease among the Winnebago Indians was 10 per cent.——Long Pine has 60 cases. When quarantine was proposed it was found that the state board could recommend, but not enforce regulations. Local boards must protect the health of the community and prevent the spread of the disease.——Cedar and Knox counties have 30 cases of the disease.——Ainsworth has quarantined against Long Pine.——A number of cases have developed at Johnstown and Wood Lake.

NEW JERSEY.

Dr. **Daniel Stock,** Camden, is seriously ill as the result of an infected wound of the palm of the right hand received while operating.

The new buildings of the New Jersey State Hospital were formally opened November 21 by Governor Vorhees. Among the speakers were Dr. Henry M. Hurd, Baltimore, and Governor-elect Murphy.

Isolation Hospitals.—Two portable hospitals and an administration building contracted for by the Newark Board of Health will be ready for occupany this week. The hospitals are intended for smallpox patients, the number of which is daily increasing and already exceeds the capacity of the present small building used as an isolation hospital.

The Morristown Medical Club, made up of the leading medical men of Morristown and vicinity, was entertained by Dr. H. A. Cossitt at the State Hospital, who presented a paper for discussion on cholelithiasis, and cited three cases that he had recently operated on, with recovery. The November meeting will be led by Dr. Douglas, of Morristown.

Cheap Diploma.—James Norton-Smith, manager of the Central University of Medicine and Science, Jersey City, was arrested, November 16, on a charge of attempting to obtain money by false pretenses. The charge was made by Chief of Police Benjamin F. Murphy and was based on a letter received from Dr. D. H. Harrison, of Swanville, Tex., to whom Norton-Smith had sent a letter offering to furnish a diploma for $10.

Smallpox in Orange.—Six cases have been reported, all in the same house. On November 14 a girl seven months old was taken with smallpox, which was traced to an uncle who had been for three weeks under treatment with doubtful indications including the convalescent stage. At the date mentioned the mother, her three-year-old son, her brother aged 16, and sister aged 13, all had the disease. The house is now under quarantine and stringent precautions have been taken against the spread of the malady.

Staff Changes.—There have been several changes recently in the staff of the New Jersey State Hospital at Morris Plains. Dr. A. S. Corwin, assistant physician, is now serving upon the staff of Hudson Street Hospital, New York City; Dr. H. A. Cossitt was appointed to fill the position; Dr. T. P. Prout, pathologist and second assistant, resigned to pursue pathological studies at Vienna. He has done some original research work in epilepsy during the past year. This vacancy was filled by the promotion of Dr. H. A. Cossitt, and the appointment of Dr. W. H. Barton, of Connecticut, as pathologist and fourth assistant. Dr. C. C. Beling, late of Hospital of Ceylon, and Edinburgh, Scotland, was appointed fifth assistant, and Dr. Raymond D. Baker, of St. Joseph's Hospital, Paterson, sixth assistant physician.

NEW YORK.

Personal.—Dr. John F. Crowley was appointed town physician of Batavia, vice Dr. Lucius B. Parmele, who has gone to California for his health.——Dr. Hardin W. Bright, Niagara Falls, has moved to Ransomville.——Dr. Fred A. Smart, Carlisle, has moved to Nassau.

Chief Surgeon Suspended.—The Board of Trustees of the State Soldiers' and Sailors' Home have suspended Dr. James T. Burdick, surgeon-in-chief of the Home Hospital, pending the charges preferred against him by Col. Andrew Davidson, commandant. There are twenty-four specific charges, one of which is insubordination. Assistant-Surgeon A. P. Sheelman will have charge of the hospital pending the disposition of the charges. Dr. Burdick is a prominent G. A. R. man, being past medical examiner of the Department of New York, and was appointed surgeon in chief, February 22.

Buffalo.

The Gratwick Pathological Laboratory of the University of Buffalo is expected to be finished in a month. All the apparatus of the laboratory, which is now in the University, will then be transferred to the new building. The laboratory building was given the University by Mrs. Gratwick as a memorial to her deceased husband. Dr. Harvey R. Gaylord is in charge of the laboratory.

Magnetic Healer Fined.—William von Scheidt, a magnetic healer, was arraigned in the municipal court charged with violating a rule laid down by the Health Department, which makes it incumbent on physicians and others to report any cases of contagious diseases. Von Scheidt is charged with having failed to report a case which resulted in death from diphtheria. In this case cultures were taken from the throat by the Health Department and diphtheria bacilli were found The defence of the "healer" is that death resulted not from diphtheria. but malaria. He was found guilty and fined $250 and $28.40 costs.

Report Regarding Smallpox.—Health Commissioner Wende has submitted a detailed report to the Board of Aldermen concerning smallpox in Buffalo. He reported that during the past four months there were 13,226 cases and 431 deaths, in 36 states of the union. Since April last 13 cases were observed in Buffalo. Eight have been cured and five are still under treatment in the hospital. Some of the difficulties in the work of detecting cases and securing public protection are illustrated in the case of Vincent Suracci who while ill of the disease at its height continued to dwell concealed in his home in a crowded tenement house and who, fearing detection and removal to the hospital, absconded to the home of friends near by, to which he was traced with difficulty, and where he was apprehended. This case necessitated the vaccination of the inhabitants of the entire street and its contained tenement houses, which was only feasible by doing the greater part of the work at night with police assistance to secure the whole number.

New York City.

The Hospital Saturday and Sunday Association of New York reported at its November meeting that two years ago the total receipts aggregated $70,000 and last year that it was $74,000, while for the pending collection it was expected that the total would reach $80,000.

Decision on Bequests.—A decision which is of considerable interest to hospitals and various charitable institutions, has just been handed down by the Court of Appeals. It is to the effect that all charitable institutions must pay the state inheritance tax on bequests. The decision was with reference to bequests made by the late Collis P. Huntington to the Roosevelt Hospital, the Hospital for Ruptured and Crippled, and a number of well-known charitable institutions.

Ambulance Accident.—A Sixth Avenue electric car crashed at full speed into an ambulance of St. Vincent's Hospital. Striking it squarely in the middle, the ambulance was completely wrecked, and the driver and Dr. J. W. Cabannis, were

thrown out and severely injured. Because of the frequency of these collisions, and because no attention has been paid to complaints, the hospital authorities declare their intention of bringing suit against the railroad company.

A convalescent hospital is to be established by St. John's Guild at New Dorp, Staten Island, Richmond Borough, for the care of women and children. The announcement of intention was made at the annual meeting of the Guild, November 12, when the annual report was read. During the past summer 61,114 mothers and children were carried out on the salt-water for a day of rest and treatment. Nearly 34 per cent. of that number were bathed in the salt-water bathrooms, and during the last year 2630 cases were admitted in the seaside hospitals, an increase of 24 per cent. over the largest previous year. The treasurer reported as received $119,374.78, an increase of $37,790.64 over 1900; the disbursements were $88,717.97, of which $25,680 were expended for buildings, improvements and repairs, leaving a balance on September 30 of $31,839.33. The Guild's membership is quoted at 1000, which shows an increase of 23.5 per cent. over the preceding year.

OHIO.

St. Clair Street Hospital, Cleveland, is to have a $10,000 addition in the early part of next year.

Fire at Starling.—A fire occurred at Starling Medical College, Columbus, November 9, which started in an incubator in the laboratory and did damage amounting to more than $1000.

Hospital Site Donated.—H. H. Hall, Ashtabula, has offered the city a half acre of land to be used for hospital purposes. The only provision is that a $5000 hospital building shall be erected thereon.

Communicable Diseases.—Springfield has an epidemic of scarlet fever and measles.——Diphtheria and scarlet fever are increasing in Columbus, and causing much anxiety.——At Zanesville it has been decided that there is no need of reclosing the schools of the city; that there is no diphtheria epidemic, and that the usual means at the command of the board of health is sufficient for the occasion.

Prevention of Smallpox.—The current issue of the Ohio Sanitary Bulletin states that from April, 1898, to Oct. 1, 1901, more than 9000 cases of smallpox had been reported in the state, with 124 deaths, and that practically every county had been invaded by the disease. It also gives plain and concise information for local boards of health regarding the detection of smallpox; isolation hospitals; quarantine, its duration and the support and aid of persons isolated; vaccination; disinfection, and burial of the dead.

Cincinnati.

Dr. Samuel E. Newman has returned from his six-month study tour of Europe, November 8.

Low Death Rate.—According to the report of the Health Department just presented to the Board of Public Service, the annual death rate for the year covered was 16.60 per 1000 of population, the lowest mortality rate shown by the records for twenty years past. The total number of deaths was 5,412; births, 5,548.

Interne Changes.—The terms of Drs. Walter Stix, William Prichard, W. J. Taylor and Shaler Berry, as internes to the Cincinnati Hospital, expired on November 10, after a service of sixteen months. Dr. Stix will leave for Europe to further his education; Dr. Prichard has been appointed assistant surgeon to the State Insane Asylum at Columbus; Dr. Berry will locate at Newport, Ky.; Dr. Taylor will become associated with his father in Cincinnati.

Personal.—It has been officially announced that Dr. Frederick D. Barker, Dayton, has been appointed chief surgeon of the Cincinnati, Hamilton and Dayton Railway Company, filling the vacancy occasioned by the death of Dr. Ramsey. Dr. Barker's headquarters will be at Dayton, Ohio, the appointment taking effect November 12.——Dr. Charles V. Herdliska, now Secretary of Legation at Vienna, has been appointed United States Consul to Kingston, Jamaica.

PENNSYLVANIA.

Dr. George S. McLeod, Jr., Bryn Mawr, has abandoned his practice and home and has gone to Whitehall to take care of the nine smallpox patients in that suburb.

Smallpox Spreads.—During the past week, 72 new cases of smallpox were reported to the Philadelphia Board of Health, with 8 deaths. At present, 219 cases of the disease are under treatment in the Municipal Hospital and at their homes.

School Board Changes.—Drs. George I. McLeod and Samuel S. Stryker, who had been for nearly thirty years members of the Philadelphia School Board, resigned recently. Dr. Victor C. Roberts has been elected a member to fill the vacancy.

Teachers Must Be Vaccinated.—In Common Pleas Court No. 4, Philadelphia, November 14, President Judge Arnold filed an opinion, refusing to grant an injunction in the proceedings recently begun by Mary Helen Lyndall against the Board of Education to have the defendants restrained from interfering with her continuance as a teacher in the Girls' High School. The court ruled as follows: "As school directors may, in the exercise of a sound discretion, exclude from the public schools pupils who have not been vaccinated, as was decided by the Supreme court, so may they exclude teachers and other employes for the same reason. The protection which vaccination is believed to afford must be reciprocal; teachers and pupils are alike entitled to protection against contagious disease. Whether vaccination is a preventive of smallpox, this court has no power to investigate and decide. The Legislature has authorized, and the Supreme court has legalized, regulations requiring vaccination, and therefore a court in the first instance is prohibited from inquiring into the efficacy of vaccination as a preventive of smallpox. The opinion of the plaintiff that vaccination is not a preventive, and that it is dangerous to her health, is not a sufficient reason to exempt her from obedience to the order of the Board of Public Education requiring vaccination; hence the offer of the plaintiff to show that she considered it dangerous to her health was irrelevant and immaterial and was properly rejected." The court further held that the Board had the power to make and enforce such a rule as was made, that Miss Lyndall had refused to comply with the regulation and was therefore subject to suspension or dismissal.

TEXAS.

Dr. George R. Tabor, Texas' new health officer, has quarantined against Liverpool on account of bubonic plague, and all vessels will be subject to detention coming from infected ports.

Restriction of Sale of Poisons.—The San Antonio City Council, on November 4, passed an ordinance prohibiting the sale of morphin, cocain or other poisonous drugs, except upon prescription of a reputable physician.

Personal.—Dr. Charles F. Norton, quarantine officer at El Paso, has resigned to accept the position of clerk and assistant health officer of the state.——Dr. Clay Nichols, Yoakum, has moved to Gonzales.——Dr. Watson G. Terry, Denison, has located in California.

Compulsory Vaccination.—The El Paso ordinance requiring compulsory vaccination became effective November 11, for the winter season. Vaccination officers will scour the Mexican quarters of the city to vaccinate inhabitants, and all pupils of the public schools will be required to present certificates from their family physicians to show that they have been vaccinated. The children of the poor will be vaccinated by the city.

WEST VIRGINIA.

Applicants for Licenses.—At the meeting of the State Board of Medical Examiners, held in Huntington, November 11-13, forty-two applicants registered for examination.

Hospital Closed.—The St. Luke's Hospital, Parkersburg, which was principally maintained by the Ohio River Railroad Company, was closed November 15, as the Baltimore and Ohio would not maintain it.

Personal.—Dr. James W. McDonald, Benwood, has been appointed superintendent of Miners' Hospital, No. 3, Fairmount, with Dr. William C. Jamison as assistant.——Dr. Thomas F. Downing, New Martinsville, has received an appointment as superintendent of Miners' Hospital, No. 2, McKendree, vice Dr. Albert G. Stalnaker, resigned.

Communicable Diseases.—Considerable anxiety prevails in Martin's Ferry by reason of the spread of diphtheria.——An epidemic of diphtheria is raging in Keyser, where 75 cases have been reported.——At Hedgesville the prevalence of diphtheria has caused the closure of the public schools.——Typhoid fever is causing anxiety at Jim's Branch, near Bowen.

WISCONSIN.

Diphtheria is epidemic in Peshtigo and in Daggett, and scarlet fever in Waterloo, where the public schools have been closed.

Dr. E. J. **Addison,** Marinette, has started for New York. He expects to study there and in Edinburgh, going then to Australia, whence he will return to practice in Marinette.

Antigo **Hospital.**—Drs. Ignatius D. Steffen and Fred V. Watson, Antigo, have remodeled the old hospital building, increased its accommodations, added a modern operating room, and equipped it.

Waupaca **County Insane Asylum.**—The plans for the county insane hospital at Weyauwega have been approved, and the contracts let. The building will cost about $80,000 and will accommodate 125 patients.

Logging **Camps Closed.**—At the instigation of government officials, Senator William O'Neil, Washburn, closed all of the logging camps on the Bad River reservation, November 13. It is presumed that fear of a smallpox outbreak is the cause.

GENERAL.

Plague in **San Francisco.**—The death of a Chinaman, supposedly from the bubonic plague, occurred in San Francisco, on November 4, according to the lay press.

Dr. **John F. Anderson,** assistant-surgeon of the Marine-Hospital Service, has sailed on the *Lucania* for Liverpool, where he will investigate the recent plague outbreak.

Dr. **William Lee Howard,** Baltimore, will shortly bring out, it is said, a study in dipsomania entitled "The Perverts." It is dedicated to Edgar Allan Poe, and is in part a justification of that writer's life.

An **Impostor.**—It is reported that a certain "Dr. Decker," proclaiming himself a German, has been borrowing money from physicians in Fort Dodge, Iowa, and possibly elsewhere, by working on their sympathies with a tale of woe and of a rich uncle.

CANADA.

Smallpox.—Two deaths occurred from smallpox in St. John, N. B., November 15. Five new cases were reported, which now makes 51 cases in all, with 7 deaths.

Personal.—Dr. J. D. Lafferty, Calgary, N. W. T., has been appointed Registrar of the College of Physicians and Surgeons for the North West Territories in place of Dr. H. U. Bain, deceased.

Dr. **George T. Orton,** Winnipeg, died on the morning of the 14th inst. He was born at Guelph in 1837, and represented Centre Wellington, Ontario, in the Dominion House of Commons from 1874 until 1890.

Osteopaths Organizing for Defense.—As a result of the recent trial in the Toronto Police Court, and the action of the Ontario Medical Council, the osteopaths contemplate organizing into a body, to be known as the "Ontario Osteopathic Council."

Alumni of the Toronto General Hospital have elected the following officers: Hon. president, Dr. J. T. Fotheringham; Hon. vice-president, Dr. Goldie; president, Dr. F. A. Cleland; vice-president, Dr. A. Chisholm; secretary-treasurer, Dr. J. H. Brent; committee, Drs. O'Brien and Currie.

McGill Medical Buildings.—McGill has just completed unexcelled laboratories for the study of bacteriology, physiology and pathology. They are fitted out with all the most elaborate and scientific instruments; each student will be supplied with a complete set of necessary apparatus. The Medical Faculty will hold the annual banquet on December 6.

Wholesale Poisoning in Montreal.—At the regular meeting of the Hygienic Committee of Montreal the City Analyst presented a rather startling report. An entire family in the city had been poisoned through eating canned apples; an examination of the solder revealed that there was over 70 per cent. lead therein. An analysis of the apples and juice showed them to contain dissolved tin.

Compulsory Vaccination.—The smallpox epidemic throughout the province of Quebec has reached such a critical stage that the Provincial Board of Health now insists upon all municipalities within four days enforcing the regulations with regard to compulsory vaccination, particularly applying to manufactories and educational institutions, and a certificate must be forthcoming that the pupil or workman has been successfully vaccinated within the last seven years.

The **Lumbermen and Vaccination.**—An order has been issued by the Quebec Board of Health to the proprietors of shanties throughout the province of Quebec, calling upon them to have all their men vaccinated before undertaking the winter's work in the woods. The latest outbreak in the province is at Sorel, where a number of persons are affected. Dr. Beaudry, chief inspector of the board, is investigating at that place and making arrangements to have the regulations of the board carried out.

New Hospital Wing at Hamilton.—The Billings Memorial Wing, a recent addition to the City Hospital, was formally opened on the afternoon of November 12. The donor of the new wing is Mr. John Billings, of that city, and commemorates the memory of his late wife. A new nurses' home is also in contemplation of being erected, the ground for which has already been purchased. The graduating exercises of the Training School were held the same afternoon, when 8 nurses received their diplomas.

Consumption of Liquor and Tobacco in Canada.—The excise returns for the official year ending June 30, 1901, gives an idea of the quantity of drink and smoke in Canada. Beer is the favorite beverage, its consumption per head of the population being 4.737 gallons, as against .765 gallons of spirits and .1 gallon of wine. This is an increase over the preceding year, which was as follows: Beer, 4.364 gallons; spirits, .701 gallons; wines, .085 gallons. The consumption per head of tobacco was 2.404 pounds, as against 2.3 pounds for the previous year.

Grand Jury Presentment on Eddyism.—In the presentment of the grand jury which served at the recent criminal assizes at Toronto, the following reference is made to the case of eddyism before that court: "The weakest point in this case appeared to be that the party most directly and morally responsible for the imposture—if it be such—is the demonstrator, and, as the law stands he can not be held liable, therefore a change seems desirable, which would prevent anyone not a legally qualified physician acting as a substitute for such aid: the prescribing of medicine or other physical treatment should not be necessary to render the demonstrator liable to action." Justice Ferguson complimented the jury on its presentment.

A New Maternity Hospital for Montreal.—At the annual meeting of the Board of Directresses of the Montreal Maternity Hospital held last week, a new site for the purposes of a building, comprising 16,000 square feet, was purchased at a cost of $10,000. The new building will be constructed on the most approved plan, will have accommodation for 45 beds, and will cost between $30,000 and $40,000, exclusive of equipment. The physician's report stated that there remained in the institution at the end of last hospital year, 7 patients, and that during the year there were 229 confinements; one patient had been transferred to the General Hospital, and 9 remained in the institution at the close of the past year. There had been 27 applications at the Training School, 15 being accepted. Eleven nurses were graduated during the year.

FOREIGN.

Smallpox in Vienna.—A dispatch to the press, on November 19, states that Vienna is experiencing a smallpox epidemic; on the 18th, 35 new cases were reported.

A Vegetarian Orphan-Asylum.—The municipal authorities of Breslau have taken the necessary steps to accept the Baron legacy of half a million marks for the foundation of an asylum for children, to be exclusively vegetarian. The legacy was originally bequeathed to the city of Berlin, but was declined.

Passports Not Issued to Consumptives.—The *Allg. Med. Cent. Ztg.* of October 16, states that Russia, Germany and Roumania have entered into a mutual agreement that in future no passports shall be issued to persons with pulmonary affections.

Campaign Against Malaria in Italy.—The Red Cross has stations ready for the campaign against malaria on the Roman Campagna. Two stations are to be equipped for comparative research. One is to be amply protected with screens, and the inmates will be treated with quinin. The inmates of the other station will depend exclusively on Koch's method of warding off malaria by prophylaxis, with quinin for their protection.

Deaths Abroad.—The death is reported of Dr. J. C. Haentzche, physician to the German embassy in Persia. His mastery of Oriental languages was so perfect that he was summoned every year to Berlin to conduct the examinations in the Oriental Seminary.——The historian and editor of Schmidt's Year-Books, Dr. J. A. Winter, has also recently died at Leipsic in his 86th year. He has been librarian at the university since 1859 until quite recently.——A prominent surgeon of Stettin, Dr. C. Schuchardt, has recently succumbed to blood poisoning.——Munich has lost Dr. G. Naster, one of the pioneers in the battle of the clubs.

Infected Antitoxin.—Criminal proceedings have been instituted against Belfanti and Leoni, the director and assistant at the Milan institute which made the diphtheria antitoxin that caused the death from tetanus of a number of children this year. They are accused of criminal negligence in the preparation of the serum. It was established that at previous times the antitoxin had induced anthrax and glanders and that it was not of standard strength. The accused attribute the contamination to dust from a neighboring structure which was being torn down at the time, but the court would not accept this explanation. The case has been postponed for bacteriological tests.

LONDON LETTER.

Plague in Liverpool.

Great Britain has been once more visited by plague—in two of its great seaports, Liverpool and Glasgow. It will be remembered that in the latter town a very severe outbreak occurred last year. At the end of September or beginning of October 5 or 6 cases of illness occurred in Liverpool which were set down as influenza though plague was suspected. The patients were isolated, and two of them—little boys—died. It has now been definitely ascertained that the disease was bubonic plague. On October 23 two brothers, aged 12 and 7 respectively, were admitted to hospital as suffering from typhus fever. On October 28 suspicions arose as to the nature of the illness, which led to investigation of the locality whence the patients came. A woman aged 29 was found ill in a house in the rear of that where the boys lived. It was also ascertained that her mother and sister had died on September 28 and October 3, after brief illnesses. One of them was alleged to have complained of tender armpits. The deaths were certified as influenza. On October 18 a woman who had associated with this family died, and her death was certified as due to apoplexy. On October 26 two children, playmates of the family, were removed to hospital suffering from plague. The patients are well-to-do persons, and there is no connection of the cases with filth or squalor. From time to time during the past two years, cases of plague have arrived at Liverpool, but ample precautions have been taken and averted an outbreak. Three patients are now in hospital and are progressing favorably. No fresh cases have occurred since October 26 (ten days ago), so that there seems reason to think that the disease has been restricted. One theory as to the origin is that a policeman who lodged in the house where the first case occurred and had charge of a mortuary and handled the bodies of persons found drowned in the Mersey was the source. He is now isolated in an hospital.

Plague in Glasgow.

Several cases of illness occurred recently in a prominent hotel in Glasgow. The patients were servants employed on the basement floor. The symptoms were those of bubonic plague. Three persons—two men and a woman—were removed to hospital. Bacteriologic examination has proved that the disease is bubonic plague. One of the patients has died, another is seriously ill, and the third is progressing favorably. On October 30 another female servant was removed from the hotel ill. The disease is believed to have been due to the large number of rats in the hotel, which have been driven there by the demolition of a number of houses. A fourth case has occurred in a barmaid who slept for a night at the hotel. Twelve members of the staff of the hotel have been isolated and will be kept so for fourteen days. An active campaign is being organized against the rats. In two hours no fewer than 200 were killed in the hotel. The hotel is one of the largest in the country and contains 400 bedrooms. Two hundred people were on the premises on the night of the outbreak. The staff of servants numbers 300. The hotel has been emptied of guests and all the servants inoculated with anti-plague serum and placed under medical supervision.

Smallpox Increasing in London.

The number of cases of smallpox in London is still increasing. According to the last report there are 283 cases in hospital. A temporary smallpox hospital is being erected at Dartford at a cost of $250,000, and a permanent one at Hither Green at a cost of $1,500,000. As many as 29 fresh cases have been notified in one day. At present all the patients are received on hospital ships moored in the Thames. The authorities evidently expect that the relatively great immunity from the disease which London has long enjoyed will not be continued in the future. It is expected that with the advent of the cold weather the outbreak will increase. The mortality is high and indicates a virulent type, which must be connected with the neglect of vaccination previously referred to in THE JOURNAL. Thirteen persons have died and 87 have been discharged. The re-vaccination of adults is going on on a large scale. In the streets and public places persons are to be seen with a band of tape around the arm. The significance of this is now well known. It is a "danger signal" to prevent grasping or rubbing against the vaccinated arm. By command of the king all the servants in Marlborough House have been vaccinated.

Death of a Great English Chemist.

Sir Edward Frankland, who recently died while on a vacation in Norway, was the subject of a memorial lecture at the Chemical Society by Professor Armstrong, one of his pupils. His fame rested chiefly on his discovery of the law of valency or atomicity, and he probably ranks next to Davy in the roll of English chemists. He was born in 1825, and at the age of 15 was apprenticed to a druggist. In 1845 he studied at the Museum of Practical Geology in London under Sir Lyon Playfair. Two years later he was elected a Fellow of the Chemical Society. In 1853 he was elected F.R.S., received the royal medal of the Royal Society and was appointed lecturer on chemistry at St. Bartholomew's Hospital. A very important part of his life work was his study of water analysis and purification. In 1865 he was asked to continue Hoffman's monthly analyses of the metropolitan drinking water, which he continued to do until his death. He also investigated the pollution of rivers, the purification of sewage and domestic water supply. He was an intensely reticent and self-contained man, and never played for place or power.

Sir Henry Thompson on Diet.

Sir Henry Thompson, who until he relinquished active practice, was the foremost genito-urinary surgeon in Great Britain and worked contemporaneously with Bigelow, is now hale and hearty at the age of 82. He is not only a great authority on his own branch of surgery but also on dietetics. He also interests himself in the subject of cremation and is president of the English Cremation Society, whose objects he has done much to further with his pen. He has just published a remarkable book on "Diet in Relation to Health," in which his personal experience is a striking object lesson. Thirty years ago, at the age of 52, he gave up alcohol. For the sake of experiment five or six years back he tried the effect of a claret glass of good wine at dinner every day for two months. Then the sick headaches and pains in the joints from which he had suffered in early life came back until he abstained again. Moreover, "after abandoning alcohol, the joints gradually lost their stiffness and ultimately became as supple and mobile as they were in youth and continue absolutely so to this day." He adds: "It may be fairly said that one example does not prove a case. But it is not a single example, and really designates a very large class of active men possessing a more or less similar temperament of which a type is here described." Half our bodily ills are due, he believes, to improper feeding. The necessity for diminishing the amount of nourishment taken as one grows older is not appreciated. "The extra glass of cordial, the superlatively strong extract of meat" are mistakes. Sir Henry draws an alarming picture of the head of the family sinking to decay because his affectionate spouse plies him with dainties he can not digest—the egg whipped up with sherry, the insidious calves' foot jelly, the inopportune cup of cocoa. She urges him to try patent foods which are so "nutritious" that his stomach can not stand them, and she imagines that even his drinks must have nutriment, forgetting that the primary object of drink is to satisfy thirst, and that to take milk, for example, with meat is one of the greatest dietic blunders that can be perpetrated. Even the dentist shares in his condemnation. He gives the patient a set of masticators as efficacious as the originals, but he does not warn the patient that the body needs less food than in the heyday of life. Though not a vegetarian, Sir Henry maintains that three-fourths of our food should be vegetable. This ensures a lighter and more active brain. The light feeder, after his meal, has fresher wit and more cheerful temper. He does not snore in the armchair. Dyspepsia is unknown to him.

Nitric Acid in Noma.—During a severe epidemic of noma following measles G. Cavazzani cured 39 out of 60 cases, by cauterizing the necrosed tissues with nitric acid on a pad of cotton. This proportion of 65 per cent. of recoveries compares favorable with the 27 per cent. recoveries obtained by other methods of treatment during an epidemic in the preceding year. —*Gazzetta degli Ospedali*, October 13.

Correspondence.

"Sanitary Sleeping-car Accommodations."

BURLINGTON, Iowa, Nov. 14. 1901.

To the Editor:—The abuse of the sleeping-car toilet room as complained of by your correspondent and made the subject of editorial comment in THE JOURNAL of November 9, should be a topic of interest to every one who has the health of the traveling public really at heart.

I rode in a sleeping car once, and while I was much more comfortable than some folks might think possible, I still feel that I might have had more for my money. Two dollars a night for a double berth three-quarters wide is enough. But when one has also to contribute an additional 25 cents towards the porter's salary, get an indifferent brush and shine, and see the wash basins used as described, there is room for one to feel that he has been "buncoed."

For that extra quarter one has a right to imagine that the porter should either furnish a special wash basin for each passenger, put the small supply usually on hand through a steam sterilizer, or make an inspection of the passengers individually, to the end that the passengers having lunch-counter remains in their mouths, sooty noses, hands begrimed with infectious dirt, and un-Chesterfieldian manners generally, may be debarred from the use of the basins altogether. Or it might answer the purpose if the basins were numbered and labeled thus: No. 1, wash hands only; No. 2, for faces only; No. 3, for mouths and noses, etc.

I am told that in England they manage these things better. There, every one is expected to bring his tub with him. Years ago I heard an old lady say to her son, who was starting out on his first long journey: "My boy you should be content when you get a clean bite, a clean bed, plenty of good water, soap and towels. People who have these things away from home and complain, may be set down as not having many comforts at home." But I think the old lady had never traveled in a sleeping car.

In conclusion I want to advise every one to do as I did that time I was in the sleeping car. Before using the basin I washed it out carefully and dried it with a clean towel (as I always do when I have strange basins, and frequently those at home). Then I proceeded to forget every unpleasant thing I had seen, and when I got home I found that I had not caught anything. Truly yours, H. B. YOUNG, M.D.

Miscellany.

A new x-ray effect has been developed in the laboratory of the Bellevue Hospital Medical College, New York, which, as described in the current *Electrical Review*, displaces the silhouette with the stereopticon. By using two sources of *x*-rays in the same tube of the apparatus designed for the purpose, the picture stands out distinctly with the intervening spaces of the objects viewed. The relations of the broken bones, etc., to their surroundings as thus indicated to the eye, it is expected, will be of great value as surgical and pathological guides to diagnosis.

Trailing Dresses at Health Resorts.—The authorities at Ems placarded the walls at the beginning of the season with an appeal: "In the interests of the public seeking health at this resort, every effort is made to prevent dust and to prevent its diffusion in the air during the dry and hot season, as is urgently required by consideration for affections of the respiratory organs. The streets and grounds are kept sprinkled to keep down the dust as much as possible, and the feminine portion of the public would essentially contribute to this end if they would refrain from trailing their skirts at this health resort. This is especially desirable during the morning promenade to and from the springs." The *Deutsche Med. Wochenschrift* states that the appeal has had no effect, as "might have been anticipated from the character of the sex which is certainly the weaker sex as far, at least, as the mandates of fashion are concerned." It adds that as the matter is one that affects the general public health, the central health authorities for the empire should take steps to regulate it.

The International Sanitary Congress.—At the recent Pan-American Medical Congress at Havana, the organization of an international sanitary congress was recognized as a necessity. It has now been completely organized and will meet at Havana, Feb. 15, 1902. It is for the purpose of conferring on sanitary matters affecting the various Pan-American countries collectively and individually. Each country is entitled to three delegates, a physician, an engineer and a merchant. The duties, rights and penalties of each country in respect to sanitary matters will be discussed, and the means to aid those nations without resources for such measures for the public health. The Congress will also discuss prophylactic measures in general, and as applied to each particular port. The greatest publicity is desired and membership is open to all men of science, manufacturers and merchants who apply to the committee of organization. Dr. Thomas V. Coronado, of Havana, is secretary, and Dr. Juan Santos Fernandez is president. English, Spanish, Portuguese and French are to be the official languages of the Congress. Further particulars will be furnished on application to the secretary.

Loeffler's Suggestion of the Treatment of Carcinoma by Induced Malaria.—It is an old-established fact that malaria has a favorable influence on the course of certain pre-existing diseases. Hippocrates asserted that persons affected with quartan fever did not become epileptic, and that quartan fever occurring in an epileptic cured his epilepsy. A Hungarian professor of anatomy published in 1775 the history of a case of mammary cancer cured in the course of a few weeks by an intercurrent double tertian fever. Loeffler thinks that these and similar facts justify the attempt to cure carcinoma by artificially inducing malaria, which is a disease over which we have effective control. He suggests that possibly the increase in cancer in temperate countries may be due to the extinction of malaria, and calls attention to the extreme rarity of cancer in the tropical, that is, the malarial-infested countries. He urges physicians in the tropics to collect data in this line, and cites Pagel, who states that he can not remember a single case of cancer in ten years of practice in northern Borneo. Loeffler concludes his communication to the *Deutsche Med. Wochenschrift*, just received, with the assertion that physicians would be justified in experimenting on an extensive scale to cure carcinoma by the inoculation of malaria.

Women in Medicine.—Two important historical works have recently been published in Paris on this subject, one by Melanie Lipinska, and the other by Marcel Baudouin. The latter was undertaken in honor of the semi-centennial of the admission of Elizabeth Blackwell to the medical profession, Jan. 23, 1849. Woman's progress during the last decade has been remarkable. In Russia there has long been complete equality between men and women physicians, and women have recently won their cause in Hungary, Austria and Germany, and the prejudices against the admission of women to the medical profession are rapidly subsiding even in France. Spain still refuses to recognize medical women, although two and three centuries ago several Spanish women acquired some fame by their practice of medicine. Women physicians are now recognized in Belgium since 1890, in Italy since 1878, in Portugal since 1886, in Mexico since 1887, in Sweden since 1870, in Switzerland, Roumania, Bulgaria, in this country and Australia. Baudouin relates the history of Henrietta Faber, who practiced medicine in Havana for years, disguised as a man. She married in 1820 and was at once prosecuted and condemned to ten years of imprisonment. Medical women were numerous in ancient Greece and Rome, and in Italy during the Middle Ages.

The Scientific Investigation of Consumption Cures.—There is a general feeling among the public that methods of treatment of consumption which are not brought forward

through the orthodox channels are systematically boycotted by the medical profession. The argument is one, moreover, which is put forward by irregular practitioners who lay claim to having discovered a "cure" for this too prevalent disease. It will be news to many of our readers that provision at the Brompton Hospital for Consumption for the investigation of remedies for consumption was made nearly half a century ago, and is still available. According to a letter from Dr. J. E. Pollock, which was published in a recent number of *The Times*, the medical officers of that institution are authorized by the committee to avail themselves of any novel method of treatment which offers a reasonable prospect of usefulness. The only condition is that the nature and preparation of the proposed remedy shall be made known to them in writing. The authorities even go the length of admitting the person proposing such remedy to the hospital to observe its effects. A very large number of remedies and methods of treatment have been tested —and found wanting—in virtue of this permission; but it is a significant fact that no secret or other remedy has ever been submitted by outsiders on these conditions, not even the at present notorious Lachnanthes. Of course everything would turn upon what the medical officers considered "a reasonable prospect," and this, it would seem, has not been put to the test for the simple reason that quacks and men of the Alabone type prefer to compile their own statistics, and carefully steer clear of any scientific control.—*Medical Press and Circular.*

Old-Fashioned Fees.—Dr. John Radcliffe (1650-1714), a Yorkshire man by birth who removed in 1684 from Oxford to London, has come down to the present generation with the credit of an exceptional recipient of large fees. He has been described as a brusque, witty, somewhat dictatorial physician who caught the fancy of royalty almost from the start. His strictures upon the feeble pharmacy of his competitors have been mentioned as contributing to his success as a treasurer of honorariums. For attendance on William III, during the first eleven years of his reign, he had on the average more than 600 guineas per annum and was once "ordered 500 guineas out of the privy purse for the cures of M. Bentinck and M. Zulestein." On another occasion, having been sent to Namur to cure Lord Albemarle, after a week's residence in the camp abroad, his majesty gave him a treasury order for £1200, and the patient with a rare gratefulness presented him with 400 guineas and a diamond ring of "envious glitter." Dr. Gibbons, Radcliffe's neighbor, profited by his overflow to the extent of more than £1,000 per annum and a certain apothecary by recommended patronage died worth £50,000. Allowance, however, must be made for high expenses and the depreciation of money values since Dr. Thomas Young (1773-1829) was wont to say that no one should attempt to establish in London who had not a private fortune of £500 or £600 a year. As a whole, the present is a practical age abounding in competitors on the one hand and capricious patients on the other. In this fair land there are many rumors of fortunes made during the hours of sleep, but somehow the statistics are not all on hand, or else popular faith may be awry. At all events, many like John Hunter have been peevish over a guinea when won at the expense of an interrupted investigation, and let it be remembered that physicians are spasmodic accountants.

Annual Convention of the Nation's Doctors.—One of the most important conventions to be held in Saratoga in 1902 is that of the American Medical Association, which is dated for June 10 to 14, inclusive. Last week Dr. John A. Wyeth, of New York, president of the American and State Medical associations, and the secretary of the American Medical Association, were in Saratoga to meet the local physicians and discuss plans for the convention. The officers came up from New York, and were accompanied by Dr. George F. Comstock, of Saratoga, chairman of the hotel committee of arrangements, who had been in New York in attendance upon the meeting of the State Medical Association. The meeting of the Saratoga physicians was held in the parlors of the Worden hotel, those present being Drs. Comstock, Hewitt, Church, Resseguie, Humphrey, Fish, Van Arnam, Varney, Moriarta, Ledlie, Downs, Thompson, Deuell, and J. R. Swanick. President Wyeth addressed the meeting and told the plans the State and American associations had for making the convention a success, and said that it would be his aim to make the meeting, scientifically, the most important of any ever held. The secretary followed and spoke enthusiastically of Saratoga as a convention center. He then outlined some of the work necessary for the local committee to do during the ensuing months in preparation for the convention. Following the meeting, those present were entertained at dinner at the Worden by Dr. Comstock. The American Medical Association will bring together about 5000 delegates, together with their wives and other members of their families. The general meeting will be held in convention hall, while at the same time there will be sessions of specialists in the smaller halls. A feature of the convention, and one from which no little revenue is derived, is the exhibit of the supply men. The exhibit will be in the bottling room of the Hathorn spring, which even at this early date has been secured for that purpose.—Glens Falls (N. Y.) *Times*, Oct. 30.

Married.

EUGENE J. GAY, M.D., to Miss Blanche M. Slade, both of Algona, Iowa, October 30.

CHARLES M. FREEMAN, M.D., to Miss Mary E. Wilkins, at Metucken, N. J., November 15.

ARNOLD B. MCCARTY, M.D., to Miss Lillie Bell Miller, both of Owensboro, Ky., November 6.

ARTHUR GALLMAR, M.D., Baraboo, Wis., to Miss Blanche Guertin, St. Anne, Ill., November 9.

EDWARD DANA MITCHELL, M.D., to Miss Annie Bogardus Tracy, both of Memphis, Tenn., November 6.

HENRY F. AIRTH, M.D., to Miss Bessie Porter, both of Live Oak, Fla., at Jacksonville, Fla., November 7.

HUBERT ASHBY ROYSTER, M.D., Raleigh, N. C., to Miss Louisa Page, at Princess Anne, Md., November 6.

JAMES CARPENTER COBEY, M.D., Frostburg, Md., to Miss Elizabeth Kownsler Earle, Milldale, Va., November 14.

JAMES WALTER RENDLEMAN, M.D., East St. Louis, Ill., to Miss Marie Elizabeth Park, St. Louis, Mo., November 5.

HAMLINE NICKLESON DEEM, M.D., Tyner, W. Va., to Miss Edna Ellen Ramsey, Blennerhassett Island, W. Va., at Marietta, Ohio, November 9.

Deaths and Obituaries.

Albert Leary Gihon, M.D., Philadelphia College of Medicine and Surgery, 1853, Commodore U. S. Navy (retired), died November 17, at Roosevelt Hospital, New York City, after an illness of three days, from apoplexy, aged 68. Dr. Gihon was a native of Philadelphia, and there received his education. The year after his graduation he was appointed professor of chemistry and toxicology in the Philadelphia College of Medicine and Surgery. On May 1, 1855, he entered the Navy as assistant surgeon. His first foreign service was on the sloop of war *Levant*, on the East India station. He participated in the engagements which resulted in the capture of the Barrier Forts on Pearl River, near Canton, China. He also served on the *Dolphin* during the Paraguay expedition in 1858 and 1859, and on the *Preble* on the Coast of Central America and Panama. He received his grade as passed assistant surgeon May 1, 1860, and was on duty at the U. S. Naval Hospital, Brooklyn, in 1861. He was promoted to surgeon on August 1, 1861, and from 1862 to 1865 was on special duty on the *St. Louis* on the European Station, and cruising along the Atlantic Islands after Confederate privateers. In 1864 he participated in the blockade of the coast of South Carolina and from 1865 to 1868 was senior medical officer at Portsmouth, N. H., Navy Yard; from 1868 to 1870 he was attached to the store-ship *Idaho*, which was stationed at Nagasaki as hospital ship of the Asiatic squadron,

and was wrecked during the memorable typhoon of Sept. 21, 1869. In 1870 he was on special duty at Brooklyn, N. Y., was then attached to the Marine Rendezvous, Philadelphia, and later was a member of the Naval Medical Board of Examiners. On Nov. 7, 1874, he was promoted to medical inspector and was on duty at the Bureau of Medicine and Surgery of the Medical Department, and later was ordered as surgeon of the fleet to the flagship *Wabash*, on the European station. He served in the expedition of 1874 at Key West, Fla., returned to the European station as surgeon of the fleet on the flagship *Franklin* in 1874-1875. From 1875 to 1880 he was head of the medical department at the U. S. Naval Academy, Annapolis, and during this tour of duty designed and superintended the construction of the medical hospital ship for the Centennial Exposition at Philadelphia in 1876, where he also exhibited his "ambulance cot," which was approved and adopted for the use of the Navy the next year. He was appointed inspector of recruits and recruiting stations in 1878, was commissioned medical director Aug. 27, 1879, and placed in charge of the Naval Hospital at Norfolk, Va., the ensuing year. From 1880 to 1883 he was a member of the Board of Inspection of the Navy; in charge of the Naval Hospital of Washington, D. C., from 1883 to 1886; at the Hospital at Mare Island, Cal., from 1886 to 1888; of the Naval Hospital, Brooklyn, N. Y., from 1888 to 1892; on special duty from November, 1892, to 1893, and was again placed in charge of the Naval Hospital in Washington from 1893 to 1895. On May 1, 1895, he attained the rank of Commodore, having then been forty years in the naval service. He was retired from active service on Sept. 28, 1895, by the constitutional limitation of age. Since 1876 Dr. Gihon has represented the medical department of the Navy in prominent medical, sanitary and climatological associations and international medical congresses, and has been honored by election to high offices. He was a member of the American Medical Association; fellow and ex-president of the American Academy of Medicine; president of the American Health Association, 1883; vice-president of the Association of Military Surgeons of the United States in 1895, and a member of numerour American and foreign medical, historical and scientific societies. His special work was naval hygiene, and in 1871 he published a work entitled "Practical Suggestions in Naval Hygiene," which was a pioneer in that department of science. He contributed numerous articles to the literature on naval hygiene, public health, sanitary reform, state medicine, higher medical education, vital statistics, medical demography and climatology, and was for six years one of the editors of the Annual of the Universal Medical Sciences. He was the originator, and for several years one of the most active promoters of the project to erect a monument in Washington to Dr. Benjamin Rush. Dr. Gihon was married in April, 1860, to Miss Clara Montfort Campfield, Savannah, Ga., who survives him. His two sons have attained high rank among the younger American artists in Paris. He was made a Knight of the Military Order of Christ by the King of Portugal, and also received the thanks of the British and French governments for distinguished service rendered.

DR. ALBERT L. GIHON.

William Fisher Norris, M.D., University of Pennsylvania, 1861, died at his home in Philadelphia, November 18, from pneumonia, aged 63. Dr. Norris was a native of Philadelphia, was educated at the University of Pennsylvania and took his medical degree at that institution; immediately upon graduation he was appointed resident physician in the Pennsylvania Hospital. In 1863 he entered the army as assistant surgeon, served for one year, and in 1864 was placed in charge of the Douglass Hospital, Washington. At the close of the war he resigned his commission and established himself in practice in Philadelphia, making a specialty of diseases of the eye. In 1876 he was oppointed Professor of Ophthalmology in the University of Pennsylvania. He was on the surgical staff of the Wills' Eye Hospital, Vice-president of the Philadelphia Pathological Society, Fellow of the Philadelphia College of Physicians, member of the American Medical Association and of the American Ophthalmologic Society and Fellow of the Pennsylvania Academy of the Natural Sciences. His contributions to ophthalmological literature have been frequent and important. His best known work was done as editor of the "System of the Diseases of the Eye," in which he was assisted by Dr. Charles A. Oliver. This is a collection of monographs by the most distinguished ophthalmologists in this country and abroad. It is comprised in four large quarto volumes constituting the most complete study in the English language of ophthalmology in all its branches and relations. Dr. Norris wrote for this text-book the article on "Cataract and Other Diseases of the Lens."

Barton W. Stone, M.D., died in Louisville, November 13, from pneumonia complicating rheumatism after a short illness. Dr. Stone was born in Fulton, Mo., in 1844. He was graduated at Westminster College, Fulton, and shortly afterward came to Louisville and studied medicine under Dr. J. M. Holloway, graduating at the Kentucky School of Medicine in 1867. He began practice in Louisville. He was appointed assistant physician at the Western Kentucky Asylum, Hopkinsville, in 1869, under Dr. James Rodman and remained in that position until 1889, when he was appointed superintendent by Gov. S. Buckner, and was re-appointed by Gov. John Young Brown. He resigned Jan. 31, 1896, and went abroad to study asylum methods in Europe with a view of opening a private institution for the treatment of nervous diseases. In 1896 he associated himself with Dr. S. S. Crockett in the Morningside Sanitarium near Nashville, Tenn. He afterward became the proprietor, but moved to Louisville, in June, 1899, when he opened the Beechhurst Sanitarium.

J. Marcus Rice, M.D., Castleton (Vt.) Medical College, 1853, surgeon of the Twenty-fifty Massachusetts and later medical director of the Eighteenth Army Corps, in the Civil war, for 47 years a practitioner in Worcester, a member of the Massachusetts Medical Society and at one time president of the Worcester District Medical Society, died at his home in Worcester, November 11, from valvular heart disease, aged 74.

Jarvis S. Wight, M.D., Long Island College Hospital, N. Y., 1864, aged 66 years, died at his home in Brooklyn, N. Y., November 16. During the latter part of the Civil war he was in

the medical service and all through his professional life he maintained close relations with the college named. He was a member of the leading medical societies, an author, and an inventor of certain surgical devices.

Hervey McDowell, M.D., Missouri Medical College, St. Louis, 1858, prominent as a practitioner in Harrison County, Ky., lieutenant-colonel of the Second Kentucky (Confederate) Infantry in the Civil war, a member of the Americal Medical Association, and president of the Board of Education of Cynthiana, died at his home in that place, November 6, aged 65.

Charles Magill Smith, M.D., University of Pennsylvania, Philadelphia, 1847, a resident of Franklin, La., for more than fifty years, surgeon in the Confederate service during the Civil war, since 1879, president of St. Mary's Parish Board of Health and Coroner, died at his home in Franklin, November 7, after a short illness, aged 75.

William Seward Millener, M.D., Queen's College, Kingston, Ont., 1864, then an assistant surgeon U. S. Army, later a practitioner in Adam's Basin and the West, and a resident of Spencerport, N. Y., for more than thirty years, died at his home in that place, aged 58.

Thomas Flavin, M.D., University of Texas, Galveston, 1892, a member of the first class graduated from that college, and then demonstrator of anatomy, recently practicing at Galveston, died at Houston, after a long illness, November 5, aged about 50.

Robert S. Hamilton, M.D., Jefferson Medical College, Philadelphia, 1857, one of the oldest physicians in Augusta County, Va., and at one time superintendent of the Western State Hospital, Staunton, died at his home in Lone Fountain, November 9.

Horace P. Woodward, M.D., University of Michigan, Ann Arbor, 1854, for many years a practicing physician of Westmoreland, Kan., and later a resident of Escondido, Cal., died at his residence in that place, October 28, aged 77.

Harvey Putnam Tolman, M.D., College of Physicians and Surgeons, N. Y., 1848, of East Onondaga, N. Y., died there, aged 78 years. He was much interested in public affairs, and in 1865 was a member of the assembly.

Helen Upjohn Kirkland, M.D., University of Michigan, Ann Arbor, 1872, who practiced medicine in Kalamazoo until 1889, died at her home in that city from Bright's disease after a long illness, November 5, aged 63.

John P. Bishop, M.D., College of Physicians and Surgeons, Baltimore, 1886, a prominent physican of Charlestown, W. Va., and a member of the American Medical Association, died at his home, November 5, aged 42.

Gustavus F. Sargent, M.D., Medical School of Maine, Brunswick, for several years a practitioner of Bangor, Maine, and Cambridge, Mass., died at his home in Dorchester, Mass., November 2, aged 79.

David A. Gibbs, M.D., New York University, 1847, who had practiced in Social Circle, Ga., for more than half a century, died at his home in that place from paralysis, November 8, aged 76.

H. Robertson Bohn, M.D., Tulane University, New Orleans, 1893, one of the leading physicians of Biloxi, Miss., died at his home in that place, November 8, after a long and painful illness, aged 31.

Howard W. Shaffer, M.D., Kentucky School of Medicine, Louisville, 1891, a practitioner of Ponca, Okla., died at his home in that place from an overdose of chloroform, November 14.

David J. Mallery, M.D., Geneva (N. Y.) Medical College, 1847, died at his home in Bristol Center, N. Y., where he had practiced medicine for 42 years, November 7, aged 78.

Arthur H. Blair, M.D., University of Nashville, Tenn., 1894, a practitioner of Dresden, Texas, died at San Antonio, November 6.

Fred J. Oelschlaegel, M.D., University of Cincinnati, 1880, died suddenly at his home in Cincinnati, November 11, aged 46.

Book Notices.

PRACTICAL SURGERY: A Work for the General Practitioner. By Nicholas Senn, M.D., Ph.D., LL.D., Professor of Surgery, Rush Medical College, Chicago. Handsome Octavo Volume of 1133 Pages, with 650 Illustrations, Many in Colors. Cloth, $6.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

This, the latest production from this well-known author's prolific pen, does not pretend to cover the whole field of surgery, but deals particularly with emergency and intestinal surgery. Much of the work has already appeared in the shape of monographs by the author during the past fifteen years. The early chapters are devoted to anesthetics, hemorrhage and wounds in general, especial attention being given to the author's experience during the late Spanish-American war. Considerable space is devoted to fractures, and the chapter on fractures of the upper end of the femur deserves particular mention as one of the best in the book. Under dislocations only those of the hip, shoulder and elbow are briefly considered. The author's elaborate "multiple" classification of peritonitis is too circumstantial, and tends to confusion. Under intestinal surgery considerable repetition is found, and much space occupied in detailing early experiments with bone-plates, rubber rings, etc., methods now of practically historical interest, concerning which the author himself says: "A more extensive experience with needle and thread has greatly modified my views." The various forms of intestinal obstruction are well described, and the chapter on Tuberculosis of the Intestine is particularly full of interesting facts. The work closes with a chapter on resection and the standard amputations. The author's well-known vigorous and impressive style is still further emphasized by the frequent use of italics. Many of the illustrations are new and original, and well selected to aid the text.

DISEASES OF THE STOMACH AND THEIR SURGICAL TREATMENT By A. W. Mayo Robson, F.R.C.S., Member of Council and Hunterian Professor Royal College of Surgeons of England, and B. G. A. Moynihan, M.S. Lond., F.R.C.S., Assistant Surgeon Leeds General Infirmary. Cloth. Pp. 308. Price, $3.50. New York: William Wood & Co. 1901.

This work is an outgrowth of the Hunterian lectures by Mayo, at the Royal College of Surgeons in England, in 1900, and he has called in to his aid Dr. Moynihan, his associate in hospital work for many years. The book in its way fills a place in our literature that while not vacant, nevertheless has not had so many systematic monographic works upon it as some of the other subjects of regional surgery. The subject of stomach and gastric surgery has added interest to us at the present time on account of the recent discussion of the subject in President McKinley's case, and it is interesting to know that an immediate operation in such cases as that of our late President is entirely in accordance with the recommendations and teachings of the authors. While the small caliber bullets aimed at high velocity pass through the stomach and recovery is possible without operative interference, as has been shown in the recent South African experience, gunshot wounds of the abdomen we meet with in civil practice are inflicted generally by a rougher class of weapons, are more ragged and contused and do not heal spontaneously. The work is elegantly printed and illustrated, and will prove a valuable addition to the literature.

ON THE OPERATIVE SURGERY OF MALIGNANT DISEASE. By Henry T. Butlin, F.R.C.S., D.C.L., Surgeon to St. Bartholomew's Hospital. With the Co-operation of James Berry (on the thyroid), W. Bruce Clarke (on the kidney), Alban Doran (on the ovary and uterus), Percy Furnivall (on the stomach, intestine and rectum), Walter Jessop (on the eye), and H. J. Waring (on the liver and gall bladder). Second Edition. Cloth. Pp. 426. Price, $4.50. Philadelphia: P. Blakiston's Son & Co. 1900.

Notwithstanding its merits, this work has waited twelve years for its second edition, which suggests a hitherto limited reading, though one would think that there would be surgeons enough that would find it a convenient and valuable addition to their library shelves. It is a composite work, fully one-half being by the co-operation of the above-mentioned authorities, whose names are familiar to readers of the subjects of which they treat. The work is thoroughly up to the present state of our knowledge on its subject, though there are some points such for instance as appertain to the proctologic specialty as

developed in this country, that are not fully noticed. The authors seem to have given considerable attention to the American literature of the subject, still there are many hiatuses, which is not to be wondered at considering the great number of journals in which the surgical literature of this country is published. The book will be a serviceable one to every surgeon. What it has to say is to a large extent authoritative, the authors being recognized leaders in this line of practice.

MANUAL OF THE DISEASES OF THE EYE. For Students and General Practitioners, with 275 Original Illustrations, Including 36 Colored Figures. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, Eye Department, College of Physicians and Surgeons, Medical Department, Columbia University, New York. Second Edition, Revised. Price, $2.00. New York: William Wood & Co. 1901.

Dr. May's book, as he says in the first word of the title page, is a manual for students and general practitioners. The fact that a second edition of this work is demanded within eight months after its first appearance is presumptive evidence that it is meeting with approval. The entire field of diseases of the eye is covered, and the subjects are well subdivided. The author gives under each division a description of the anatomy of the parts; this is a most valuable addition and reminds one of the descriptions of the anatomy which Fuchs' work contains. Indeed, Dr. May's book shows many indications of influence from Fuchs' book. This is not criticism; it is praise. In this connection, the reviewer is reminded of a letter that he once saw written to a young medical student by his preceptor. The student had written to his preceptor that he was dissatisfied with his instructor in anatomy, and said that the instructor only gave what was contained in Gray. To which the doctor answered: "If your instructor gives what is in Gray, stick to him; he is all right."

SELECT METHODS IN FOOD ANALYSIS. By Henry Leffmann, A.M., M.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania, and William Beam, A.M., M.D., Formerly Chief Chemist Baltimore & Ohio Railroad. With 53 Illustrations in the Text, 4 Full-page Plates and Many Tables. Cloth. Pp. 383. Price, $2.50. Philadelphia: P. Blakiston's Son & Co. 1901.

This work is intended as a concise summary of analytic methods for the use of practical analysts and students, and contains a large amount of matter which will be valuable reading for any physician whether he is a chemist or not. The authors do not go into the effects of adulteration to any extent, but that is hardly necessary. That is more particularly, as they consider it, the physician's business than that of the analytic chemist. The special methods for detecting adulterants, preservatives and poisonous metals are particularly shown in the text and the work is one which should be in the hands of every sanitarian and health officer, and would not be amiss as an addition to the library of every general practitioner and all those who have not at once available recourse to laboratories, etc.

PATHOLOGICAL TECHNIQUE. A Practical Manual for Workers in Pathological Histology and Bacteriology, including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By Frank Burr Mallory, A.M., M.D., Assistant Professor of Pathology, Harvard University Medical School; First Assistant Visiting Pathologist to the Boston City Hospital; Pathologist to the Children's Hospital and to the Carney Hospital; and James Homer Wright, A.M., M.D., Director of the Clinico-Pathological Laboratory of the Massachusetts General Hospital; Instructor in Pathology, Harvard University Medical School. Second Edition, Revised and Enlarged. With 137 Illustrations. Philadelphia and London: W. B. Saunders & Co. 1901.

The new edition of this valuable work keeps pace with the recent advances in pathological technique, and will continue as a most useful guide to the laboratory worker, whether student, practitioner or pathologist. As a practical manual of histologic and pathologic methods in the study of pathologic material, no matter whether from the clinic or from the post-mortem room, this book fills its place admirably. Many changes and additions have been made, and new methods and new illustrations introduced.

THE PRINCIPLES OF HYGIENE: A Practical Manual for Students, Physicians, and Health Officers. By D. H. Bergey, A.M., M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania. Illustrated. Cloth. Pp. 495. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

The general principles of hygiene are brought together in this work in a convenient form for the medical student and physician and the author has carried his work more particularly to matters of school, military and naval hygiene than was perhaps formerly the custom in works of this kind. The treatment of the subjects is necessarily rather concise, but the facts are clearly stated. In a general way we can say that the work is one that possesses decided advantages for the American physican and student. He gives quite a full reproduction of the quarantine laws of the United States and also of Pennsylvania quarantine legislation. A brief and useful appendix giving a conversion of the different weights and measures into the metric system, and quite a full index, add to the value of the work.

MATTHEWS' PHYSICIANS' BLUE-BOOK. A Complete Medical and Surgical Register of the State of Missouri, containing Lists of Physicians and Surgeons, with School and Year of Graduation, and List of Specialists Classified Alphabetically by Towns, Showing Population. Also the Various Hospitals, Sanitariums, Colleges and Other Institutions, State Board of Health, Societies, Journals, etc., and the Late Medical and Pharmacy Laws, 1901-1902. Cloth. Pp. 175. Price, $2.00 net. St. Louis: Lewis S. Matthews & Co. 1901.

This directory contains a list of the physicians of Missouri, arranged alphabetically according to towns, those of St. Louis being grouped together at the end of the book. The name of the college and date of graduation is given, and occasionally other facts relative to the individual. The pages are marred by heavy, black-faced type, evidently to indicate those who have subscribed for the book. Besides other information, it contains the law regarding the practice of medicine in Missouri, and the revised pharmacy laws; the medical journals, medical colleges, hospitals, sanitariums, dispensaries, charitable institutions, and medical societies of Missouri are enumerated, together with a list of counties of the state.

L'EPILESSIA. Eziologia-Pathogenesi Cura. By Dottor Paola Pini. Cloth. Pp. 277. Milano: Ulrico Hoepli. 1902.

This little work has certain decided merits. Although a compilation it is rather unique in its plan, and can hardly be well compared with any other work of its scope and kind on the subject. It is not a monographic account of the disease, as its title might imply, but rather a critical scientific résumé of the various methods of treatment and the theories on which they are based. The specialist in nervous disorders, or any one with much practice among epileptics, will find the little volume a convenient résumé of facts, judiciously stated. Its up-to-date character may be estimated by the fact that the author reproduces in full as an appendix Ceni's article on blood toxicity and serum therapy in epilepsy, read before the Italian Congress di Frenatria in October, and which has just been awarded the Craig Colony prize.

A TEXT-BOOK OF EMBRYOLOGY. By John C. Heisler, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. Second Edition, Thoroughly Revised. Illustrated. Cloth. Pp. 405. Price, $2.50. Philadelphia and London: W. B. Saunders & Co. 1901.

It is not very long since we noticed the first edition of this work and expressed our opinion in regard to it. The author has in the present edition attempted to make some additions and alterations as the progress of scientific embryology should demand and to correct so far as they exist whatever errors there might have been in the earlier edition. The most extensive changes are those in regard to the formation of the placenta as it is demonstrated by the recent works of Peters and Webster. This chapter, therefore, has been entirely rewritten. New illustrations have been added, and in other respects the book has been brought up to our present knowledge of its subject.

DISEASES OF THE INTESTINES. By Dr. I. Boas, Specialist for Gastro-Intestinal Diseases in Berlin. Authorized Translation from the First German Edition, with Special Additions by Seymour Basch, M.D., New York City. With 47 Illustrations. Cloth. Pp. 562. Price, $5.00. New York: D. Appleton & Co. 1901.

This work, which has enjoyed a wide popularity in its own country and introduced to American readers in this translation by Basch, is intended as an aid to the general practitioner and surgeon. The translator has done a service to American readers by his notes, which are inserted in brackets throughout the text. In some particular parts, especially his statement of American ideas and references, is decidedly of service. It is probably impossible for a continental European writer to keep fully up to American work in this line, and, in most cases, the

American reader will have to supplement his work by the contributions of his own countrymen. In the present edition the translator has met this need to a considerable extent.

ELECTRICITY IN MEDICINE AND SURGERY. By William Harvey King, M.D., of New York. With a Section on Electro-Physiology by W. Y. Cowl, M.D., of Berlin, Germany, and a Section on the Bottini Operation by Alfred Freudenberg, M.D., of Berlin, Germany. Pp. 504. Illustrated. Price, $3.50 net.

This work is divided into Part I, having pages 1 to 250, and Part II, with pages 1 to 296, which method of paging appears awkward to the reader. A large amount of information is gathered together, but the negligent proofreading is "an eyesore." For instance there occur in Part I the following: Drganic, p. 15; portible battery, p. 59; seperate, p. 73; accumilator, p. 79; vacuua, p. 97; ulner nerve, p. 127; in Part II, lemoderma (leucoderma?), p. 259, but lemorderma in the index; pruritis, p. 260; lumpus vulgaris, p. 263. It contains a detailed account of the Bottini operation for prostatic hypertrophy.

DISEASES OF THE NOSE AND THROAT. By F. De Havilland Hall, M.D., F.R.C.P. Lond., President of the Laryngological Society of London, and Herbert Tilley, M.D., B.D. (Lond.), F.R.C.S. Eng., Surgeon to the Throat Hospital, Golden Square. Second Edition, with 2 Colored Plates and 80 Illustrations. Cloth. Pp. 605. Price, $2.75. London: H. K. Lewis. Philadelphia: P. Blakiston's Son & Co.

The second edition of this work contains an increase of about 50 pages over the first edition. The subject matter is of uniform excellence. Treatment, both medicinal and surgical, is fully and thoroughly described. The various articles on diseases of the accessory sinuses have been revised, brought up to date, and gone into more in detail than in the first edition. The illustrations number 80, and two colored plates. In appearance the book is about the same as the first edition.

A MANUAL OF BACTERIOLOGY. By Herbert U. Williams, M.D., Professor of Pathology and Bacteriology in the Medical Department of the University of Buffalo. With 89 Illustrations. Cloth. Pp. 290. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1901.

This little work gives in the smallest possible space the leading facts in bacteriology that the physician would need and a little more which he may learn if his needs and inclinations lead him to go further. It is a condensed manual of medical bacteriology and as such will continue to prove useful to many active physicians who do not feel inclined to go more deeply into the matter and study larger and more exhaustive textbooks. The fact that it has passed through two editions within three years shows that it has met a want.

THE MEDICAL NEWS VISITING LIST. 1902. Thirty Patients per Week. Pp. 192. Seal Grain Leather. Price, $1.25. Thumb-letter Index, 25 cents Extra. Philadelphia and New York: Lea Brothers & Co. 1901.

This visiting list for 1902 just received is gotten up in the excellent manner that has characterized preceding issues. The work includes the usual large amount of practical information, tables, etc. It is printed on fine tough paper, durably and handsomely bound, with a ready-reference thumb letter index.

PHYSICIAN'S POCKET ACCOUNT. By J. J. Taylor, M.D. Book and Leather Case. Pp. 208.

This convenient and complete account book consists of pages for index, balance due brought forward from former book, account of professional services rendered, record of births, vaccination, etc., cash account. Each page has 31 to 36 lines. It is not limited to any particular months or year, and can be begun or closed at any time.

Societies

COMING MEETINGS.

Indian Territory Medical Association, Muskogee, Dec. 3-4, 1901.
Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Cass County (Texas) Medical Association.—The physicians of Cass County met at Atlanta, November 9, and organized this Association with the following officers: Dr. O. M. Connerley, Atlanta, president, and Dr. R. L. McClung, Atlanta, secretary.

Vermilion County (Ill.) Medical Society.—The annual meeting of this Society was held in Danville, November 8. Dr. J. Milton Guy, Danville, was elected president, Dr. Buford Taylor, Westville, vice-president, and Dr. Elbert E. Clark, Danville, secretary-treasurer.

Henderson County (Ill.) Medical Association.—This Society met at Oquawka, November 5, revised the county fee-bill and elected Dr. Isaac F. Harter, Stronghurst, president; Dr. Coleman J. Eads, Oquawka, vice-president, and Dr. William D. Henderson, Biggsville, secretary.

Hartford (Conn.) Medical Society.—At the meeting of this Society, November 4, resolutions were passed of appreciation of the character of the late Dr. William Hudson, of grief at his death and of condolences for his family. Dr. Nathan Mayer was elected vice-president to succeed Dr. Hudson.

Mahaska County (Iowa) Medical Association.—The third effort of the physicians of this county to organize a medical society was made, November 6, at Oskaloosa, when Dr. Joseph F. Coveny was made temporary chairman, and Dr. Lewis A. Rodgers, temporary secretary, both of Oskaloosa.

Students' Obstetrical Society of the Louisville Medical College.—This Society was organized, October 31, at the residence of Dr. Walter B. Gossett. The intention is to hold monthly meetings at each of which a paper will be read and discussed. Dr. Walter B. Gossett was elected president; C. E. Ryan, vice-president; M. A. Gantt, secretary, and W. F. Burnett, treasurer.

East Los Angeles (Cal.) Physicians' Club.—At the recent meeting of this Society for organization, the following were stated as its object: Mutual improvement, the encouragement of social intercourse and harmony among its members; the elevation of professional character and the adoption of a uniform fee-bill. Dr. Eber S. Carlisle was elected president and Dr. Robert C. Dundas, secretary and treasurer.

Bucks County (Pa.) Medical Association.—At the annual meeting of this Association, held at Doylestown, November 6, the following officers were elected: Dr. Howard A. Hellyer, Penn's Park, president; Drs. Henry Lovett, Langhorne, and Alfred E. Fretz, Sellersville, vice-presidents, and Dr. A. F. Myers, Blooming Glen, secretary and treasurer. The next meeting will be held in Newtown in February next.

Medical Society of the City Hospital Alumni, St. Louis.—This Society held its decennial celebration November 4. More than one hundred sat down to a repast at Faust's. Besides the active local members of the Society, there were in attendance, Dr. E. H. Gregory, one of the Nestors of the local profession, Dr. Julius Kohl, Belleville, Ill., the oldest member of the Society, and Dr. T. Holland, Hot Springs, Ark. Brief addresses were made by Drs. Gregory, Kohl, Tuholske, Grindon and Lewis.

Grundy County (Ill.) Medical Society.—The physicians of Grundy County met at Morris, November 1, and organized this Society as a branch of the State Medical Society with the following officers: Dr. Austin E. Palmer, Morris, president; Dr. John E. Brock, Coal City, vice-president; Dr. H. Milton Ferguson, Morris, secretary, and Dr. W. E. Walsh, Morris, treasurer. Drs. John J. Brinckerhoff, Minooka, Frank A. Palmer, Gardner, and O. Prescott Bennett, Mazon, were selected as a board of censors.

Franklin County (Pa.) Medical Society.—This Society, at a meeting held at Mercersburg, elected the following officers: Dr. P. Brough Montgomery, Chambersburg, president; Drs. Oliver P. Stoey, Roxbury, and J. W. Croft, Waynesboro, vice-presidents; Dr. John J. Coffman, Scotland, recording secretary; Dr. H. C. Devilbiss, Chambersburg, corresponding secretary; Dr. David Maclay, Chambersburg, treasurer; and Dr. H. G. Chritzman, Welsh Run, censor. After the business and scientific meeting a banquet was given at the Mansion House.

Medical and Surgical Faculty of Maryland.—The Section on Neurology and Psychology was inaugurated, November 8, with Dr. Henry M. Hurd as chairman, and Stewart L. Paton as secretary. Dr. Paton showed a case of dementia precox. Dr. George J. Preston, one of combined sclerosis of the cord, and Dr. Henry M. Thomas, one of lead paralysis with double wrist-drop. The Section on Clinical Medicine and Surgery was successfully inaugurated, November 1, with Dr. Louis McL. Tiffany as chairman and Dr. John Ruhräh as secretary. Dr. William Osler exhibited a case of scurvy, and Dr. Ruhräh gave some lantern demonstrations of syringomyelia, etc.

Medical Graduates' Society of Bishop's University, Montreal.—At the meeting of this Society, held in Montreal, November 7, the following officers were elected: Dr. Francis W. Campbell, Montreal, honorary president; Dr. George Fisk, Montreal, president; Drs. F. J. Hackett, Montreal, and Dr. Grosvenor L. T. Hayes, Graniteville, Vt., vice-presidents; Dr. William Burnett, Montreal, secretary-treasurer; Drs. F. R. England, Rollo Campbell, J. J. Benny, George Hall, J. M. Jack and F. O. Anderson, resident council, and Drs. Charles D. Ball, Santa Ana, Cal., Albert F. Longeway, Great Falls, Mont., Robert A. Walker, Menominee, Mich., Dr. E. E. Bronstorph, Jamaica, W. I., Dr. Rollin C. Blackmer, St. Louis, Mo., and Dr. Casey Wood, Chicago.

Lenawee County (Mich.) Medical Society.—The first scientific meeting of this Society was held November 5 at Adrian, at which papers were read by Dr. N. D. Yale, Deerfield, on "Progressive Pernicious Anemia," and Dr. C. Kirkpatrick, Adrian, on "Pneumonia." Permanent officers were elected as follows: President, Dr. Daniel Todd, Adrian; vice-president, Dr. George Howell, Tecumseh; secretary and treasurer, Dr. David L. Treat, Adrian. Lenawee County has a population of 50,000, with nearly 75 physicians, and yet this is the first medical society ever organized in the country. It is the result of the effective work of the president of the State Society, Dr. Leartus Connor, and the secretary, Dr. A. P. Biddle, through the local aid of Dr. David L. Treat.

Ohio Society for the Prevention of Tuberculosis.—Under the auspices of the State Board of Health, Dr. C. O. Probst, its secretary, being the prime mover, this society was formed at Columbus, November 15, by 150 physicians and laymen. This Society is formed to fight in every known and feasible way the disease that kills 6000 people in Ohio yearly. An early move is the establishment of a State Hospital for Consumptives. This will be used for all cases in which there is a possible chance for cure. An isolation hospital for incurables is to be built in every county. A subordinate society is to be formed in every county. Free lectures are to be given in colleges, schools, and to the public generally on the danger of contagion from consumptive patients and on the care of consumptive patients. Consumptives are to be separated from other inmates in public institutions. Efforts will be made to establish an anti-spitting crusade. Dr. Byron Stanton, Cincinnati, presided at the first meeting. Dr. C. O. Probst read a paper on the aims of the society, after which it was organized by the election of the following officers: President, Ex-Congressman Joseph H. Outhwaite, Columbus; vice-president, S. S. Knabenshue, Toledo; treasurer, R. M. Rownd, Columbus; secretary, Dr. A. Timberman, Columbus; financial secretary, Dr. B. F. Lyle, Cincinnati; board of directors for three years, Dr. Byron Stanton, Cincinnati; Dr. C. O. Probst, Columbus; Dr. N. C. Tobey, Toledo; for two years, Dr. G. A. Doren, Columbus; Judge Gilbert H. Stewart, Columbus; Dr. A. H. Freiberg, Cincinnati; for one year, Dr. P. M. Foshay, Cleveland; Dr. W. J. Conklin, Dayton; Prof. Cady Staley, Cleveland. The annual meetings of the Society will be held in June.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fourteenth Annual Meeting, Held in Richmond, Va., Nov. 12, 13, 14, 1901.

President Dr. Manning Simons, Charleston, S. C., in the Chair.

FIRST DAY—MORNING SESSION.

Laceration of the Cervix and Its Consequences.

DR. E. S. LEWIS, New Orleans, said that lacerations of the cervix were productive of more functional and organic disturbances than had heretofore been supposed. The fascination of abdominal surgery and brilliant results achieved and the increasing scope of this work had, in a measure, diverted attention from these minor injuries which, when neglected, proved most serious, and had an important bearing upon the health, happiness and life of women. The author's intention was simply to awaken attention to the importance of the topic which had, in a measure, been lost sight of, and to emphasize what had been so emphatically and graphically described by Emmet. There was no question as to the course to be pursued by the accoucheur in lacerations of the perineum, although of less significance than tears of the cervix as to final results. In moderately recent cases the classical Emmet operation could not be improved upon; yet in certain long-standing cases, where the cervix had become thickened enormously from hyperplasia the Emmet operation would fail to afford relief. In such cases he had used the Schroeder operation or a modification of it with gratifying results.

Vaginal Puncture or Incisions for Puriform Disease or Exploratory Purposes Are Unsurgical Procedures.

DR. JOSEPH PRICE, Philadelphia, read a paper with this title. He had been asked frequently during the past year to see and reoperate on patients upon whom vaginal incisions or puncture methods had been practiced. In three very recent operations for the removal of pelvic contents puncture and vaginal incisions complicated the sections that would have been otherwise comparatively easy. The vaginal fixation, closure of the openings, refilling of puriform or serous sacs, were only local complications; the general condition of the patient became rapidly unfavorable for favorable abdominal work. He was satisfied that the ancient methods of evacuating puriform accumulations, that of cautery or caustics, was much more scientific than the present methods of vaginal incision. Operators, who practiced vaginal incisions, never know the precise pathological conditions; they puncture or incise a puriform accumulation and guess at a name, ovarian abscess, pus tube, or pelvic abscess; if the fluid evacuated was serous in nature, they called it encysted serous effusion. The probabilities were that it was a dropsy of the tube or hydrosalpinx. Puriform tubes as large and tortuous as one's flexed thumb should never be overlooked or punctured. The error of puncturing an ovarian abscess, or small dermoid, two conditions very commonly found, and both easily enucleated, should never be made. He had never known a patient cured by the methods referred to. The general condition of patients, the rapid restoration to health following clean extirpations from either above or below were striking when compared with the patients traveling around, seeking relief and health, after the timid, incomplete procedures under discussion.

DR. GEORGE H. NOBLE, Atlanta, stated, as a contrast to the experience of the essayist, that he had treated six cases by vaginal incision and drainage, with very good results, but favored operating through the abdomen and of doing more complete operations where the conditions of the patients permitted.

DR. RUFUS B. HALL, Cincinnati, Ohio, said he had practiced vaginal puncture and drainage in cases in which it was not prudent to do more radical operations on account of the desperate condition of the patients. He had always emphasized the fact to the patient and friends that this operation was not done for curative purposes; that it was a makeshift, and that a more radical operation by the abdomen would have to be done later to afford permanent relief. It was his experience that a large majority of such women returned for radical operations, sooner or later.

DR. W. D. HAGGARD, JR., Nashville, said there were patients who completely recovered from vaginal incision and drainage, and cited an interesting case in point. He fully expected to do an abdominal section in this case to remove a diseased tube and ovary, but apparently the disease had expended its course.

DR. LEWIS S. MCMURTRY, Louisville, spoke of the great change that professional opinion had undergone of late years in regard to the operative treatment of pus in the pelves of women. He referred to the early history of the vaginal operation and its great popularity for years; but now French and German operators were resorting to the suprapubic route in dealing with puriform collections in the pelvis. These operators were compelled to adopt this route as their patients only partially recovered from vaginal incision and drainage.

DR. EDWIN RICKETTS, Cincinnati, did vaginal puncture in a case in 1886. After her first delivery the woman had a severe pelvic inflammation with pus, and her condition was such as to contraindicate an abdominal operation. She recovered and subsequently bore four children. When patients did not get well from vaginal puncture and drainage, the abdomen should be opened and the diseased appendages removed.

DR. GEORGE S. BROWN, Birmingham, held that vaginal puncture and drainage in some cases should be practiced as a life-saving measure. He mentioned six cases that he had in the last four or five years in young or recently married women of gonorrheal infection of the tubes. In these he resorted to vaginal puncture; most of the patients were treated as emergency cases, and so far as he knew, only two or three of them had been reoperated.

FIRST DAY—AFTERNOON SESSION.

Treatment of Pelvic and Abdominal Tumors Complicating Pregnancy, with Report of Cases.

DR. RUFUS B. HALL, Cincinnati, read a paper with this title. The conclusions arrived at from the four cases narrated may be summarized briefly, as follows: In the very small percentage of cases in which malignant tumors are the cause of the obstruction, they should be dealt with according to the well-established principles of modern surgery. The operation should be made at once without any reference to the child, if by so doing there is any additional chance of saving the life of the mother. If the ovarian tumor is thin-walled, of large size and rapid growth, and the patient is not near her full term of gestation, an operation should be advised, even if the uterus is below the tumor. If the tumor is thick-walled and of slow growth, is not causing much, if any, inconvenience, and rides above the enlarged uterus, an operation is not urgently demanded. If the tumor is small in size, is situated below the uterus, and is fixed either by adhesions or impaction an immediate operation is demanded. Tapping the tumor for temporary relief should not be done. In fibroid tumors of the uterus associated with pregnancy, where there are but one or two large nodules, and they are located in the upper half of the uterus, an operation should be advised only in rare instances. These patients can be delivered safely and be operated later, if necessary. If the tumor is below the pregnant uterus and a large nodule blocks up the passage, an operation should be advised and made early. Myomectomy is usually not to be considered in these cases on account of the increased blood supply. The writer would advise it only when an exceptionally favorable tumor for this method is encountered.

DR VIRGIL O. HARDON, Atlanta, said that his conclusions were essentially the same as those enunciated by the essayist. He mentioned two cases of ovarian tumor complicating pregnancy in which he thought it advisable to operate. These cases were singularly alike; both were primiparæ, and during the fourth month of pregnancy. The tumors were removed; the women recovered, went to full term, and the children are living. He had seen many cases of fibroid tumors complicating pregnancy; but where the fibroid is so situated as to exert no pressure on the uterus and thereby not interfere with pregnancy, he thought there was no indication for operation in such cases until pregnancy has been completed.

DR. GEORGE H. NOBLE, Atlanta, said that removal of a fibroid tumor complicating pregnancy should be based upon mechanical obstruction to labor. Ordinarily, of course, there were exceptions, as a twisted pedicle, inflammatory conditions, etc.; then the tumor should be removed. If the tumor or tumors were in the lower segment of the pelvis in advance of the fetus, it was necessary to remove them or the uterus must be evacuated, and as these tumors can be removed with considerable safety and with a chance of saving the life of the child, it was a feasible operation. Dr. Noble narrated cases in point.

DR. W. D. HAGGARD, Nashville, cited a case which he saw with Dr. Fort in which a myomectomy was done. The patient was a colored woman, who had been married ten years, and was sterile. She was three and a half months advanced in pregnancy, and had two subserous fibroid tumors, one about the size of an orange on the right side on the anterior face of the uterus, the other one about the size of a baby's head on the left side, near the fundus. Both tumors were removed easily without any deleterious effects; the woman was subsequently delivered of a full-grown, living child.

Unique Case of Extrauterine Pregnancy.

DR. H. TUHOLSKE, St. Louis, Mo., contributed a paper with this title. The following is a résumé of the case: Tubal pregnancy (ampullar) of the right side. Tubar abortion with complete extrusion of the gestation sac, unruptured and containing fetus; hemorrhage and position carried the sac up to the diaphragm between the right lobe of the liver and upper end of the kidney. Implantation in the parietal peritoneum of the diaphragm as far forward as the attachment of the coronary ligament and in the liver from its upper border to the transverse fissure; down the diaphragm posteriorly and in the upper end of the kidney. Establishment of placental connections, allowing the development of a well-grown living child and pushing the liver in its growth towards the left and turning it upon its axis, with the coronary ligament as a fixed point until the right margin of the liver became the anterior. Histological examination showed original implantation in the ampulla of the right tube, and the formation of a placenta by efficient transformation of the peritoneum and the liver tissue adjacent. The diagnosis of the case from its history was confirmed by clinical, operative, pathological and histological evidence.

The Surgical Treatment of Painful Menstruation.

DR. HENRY D. FRY, Washington, D. C., in this paper stated that pain should not occur at the menstrual period in a healthy woman with healthy pelvic organs. This dual relation between the general health and the generative organs must be constantly kept in mind. As these sufferers are nearly always young girls or unmarried women, the indications must be clearly manifest. The character and severity of the pain, its duration and the condition of the patient during the intermenstrual period must be considered. What results can be expected from surgical treatment? In the discussion of this subject before the last meeting of the American Gynecological Society, the reflected opinions presented a gloomy picture for the woman. His object in presenting this paper is to protest against that verdict rather than offer any original method. His experience has been just the opposite. Failure to give relief has been due, as a rule, to some complication the removal of which subsequently resulted in cure. The line of treatment followed with such satisfactory results is that pointed out in the main by Gill Wylie: First, thorough dilatation of the cervical canal, then the endometrium is gone over carefully with the sharp curette; irrigation and often a second curettage; the application of pure carbolic acid; irrigation and dilatation repeated, if necessary. A Wylie drainage plug as large as will readily pass is inserted into the cervical canal and kept in position by a Smith pessary. For a number of years he was accustomed to leave the plug *in situ* six days, but following the suggestion of Wylie, he now allows it to remain from three to six weeks. He usually keeps the patient in bed two or three weeks after the operation, and if no discomfort be experienced, permit her to get up and go around wearing the plug several weeks longer. He believes the use of the hard rubber plug does much to aid in the permanency of the relief obtained. It causes the formation of a cicatricial ring of tissue at the point of constriction which insures patulency. He had not seen any bad results follow its use. In a few cases it causes pain, and on that account must be removed sooner than the time mentioned. He attributes the failure of those who deplore their results to the omission of some important point in the technique of the operation. For instance, they simply dilate the cervix or dilate and curette. For all necessary purposes dysmenorrhea can be divided into two classes, simple and complicated. The simple comprises about 80 per cent. of the cases, and the treatment described cures or greatly relieves three out of every four. The conditions usually found on examination are as follows: The external genitalia are undeveloped; the vagina, cervix and uterus are small. There is stenosis of the cervical canal and endometritis. The uterus is normal in position or one of exaggerated anteflexion; it is movable and the appendages are healthy. The accompanying endometritis is chronic and due to deficient drainage of the cervix uteri in consequence of stenosis of the cervical canal. The undeveloped condition of the generative organs in young women is very common and parallel to deficient growth of the mammary gland and its consequent failure to perform the

function of lactation. The second class comprises the cases in which some complication exists. It may be displacement, small fibroids in the body of the uterus, or disease of the tube or ovaries. These complications must be recognized and corrected. In a very small proportion of cases, as in cirrhotic ovaries, operators are driven to produce the menopause artificially. In such cases he believes it advisable to amputate the uterus at the same time, as the subsequent reflex nervous symptoms are diminished and the period of suffering shortened.

Repair of a Complete Laceration of the Perineum in a Girl of Nine Years.

DR. H. A. ROYSTER, Raleigh, N. C., reported this case. The laceration was produced by the finger of the obstetrician at the patient's birth. The patient was a well-nourished girl of 9 years. At her birth her perineum was torn completely through the recto-vaginal septum, and the explanation of this occurrence is stated to be as follows: The child's grandfather, a very aged physician, acted as accoucheur. Owing probably to dimmed eyesight and infirmity, a breech presentation was evidently mistaken for a vertex position and the obstetrician, introducing his finger into what he thought was the child's mouth, but which was really its vagina, exerted traction, and the result was a complete laceration of the baby's perineum. No immediate harm came from the accident, and it was resolved not to attempt a restoration of the injured region until the girl was considerably older. During the autumn of 1900 she came first under the observation of Dr. Hubert Haywood, who related the above facts and referred the patient to the speaker for operation. The parts on examination showed a quantity of dense scar tissue. The tear extended into the vagina to the depth of a half inch, and the sphincter ends were plainly seen on either side. No incontinence of feces had occurred. On Nov. 15, 1900, under chloroform anesthesia, a butterfly-shaped denudation was made in the vagina, and the exposed edges of the rectum pared, taking pains to dissect out the torn sphincters. The rectal tear was then united with catgut sutures, which were tied inside the bowel and cut short. Silkworm gut was used for closing the vaginal surfaces and bringing together the ends of the sphincter muscle. Perfect apposition was obtained and rigid asepsis observed in all the details of the technique. In spite of these precautions only partial success resulted, due to the fact that the patient's bowels became unmanageable just at the beginning of the operation, and the denuded area was constantly and unavoidably bathed by a stream of feces. This unlooked-for disaster was brought about by faulty preparation of the patient before admission. A purgative had been administered the day before, and on the morning of the operation an enema was given, with the report that the bowels had been thoroughly emptied. The continual discharges were a source of much annoyance, but having begun it was considered best to complete the operation. At the end of two weeks it was found that the external sutures did not hold, although union of the upper part of the denuded tissue was secured. A second operation was attempted April 18, 1901. The same method of procedure was employed, but modified to suit the changed relations. The child was prepared under direct personal supervision, and no fecal contamination occurred. The parts healed promptly, and the result was perfect. The author could find no parallel to this case in the literature of the subject.

[To be continued.]

UNIVERSITY OF CHICAGO MEDICAL CLUB.

First Regular Meeting, held in the Hull Physiologic Laboratory, Oct. 21.

DR. H. H. DONALDSON was elected president, and Dr. Preston KYES, secretary for the ensuing year.

Influence of the Valency and Possibly of the Electric Charges of Ions Upon Their Toxic and Antitoxic Effects.

DR. JACQUES LOEB stated that together with his colleagues, he had shown that sodium ions are absolutely essential for the production of rhythmic contractions in striped muscle or in the swimming-bell of a jelly-fish or the heart, and yet that a pure solution of sodium chlorid is poisonous; further, that the poisonous effects of a pure sodium chlorid solution can be overcome by adding a trace of any soluble calcium salt. While some authors had drawn the conclusion that calcium is the stimulus for the heart-beat, the speaker had proved by a series of experiments on the development of the eggs of a marine fish, Fundulus, that this interpretation of the rôle of calcium in the heart-beat can not possibly be correct. The eggs of Fundulus develop in sea water, which is chiefly a solution of sodium chlorid and which has approximately the concentration of a five-eighths normal NaCl solution. The same eggs, however, develop in distilled water and even in redistilled water, thus showing that no ions of any kind are necessary for their development. Yet if these eggs are put into a pure chlorid solution of the strength in which they develop normally in sea-water, not a single egg can form an embryo. If, however, a soluble calcium salt be added, all the eggs form embryos and the embryos develop. This proves conclusively that calcium can not be considered a stimulus for the development of the eggs, as the eggs develop just as well in distilled water. The calcium ions can only perform the function of antagonizing the poisonous effects of the sodium ions.

It occurred to the speaker that this fact might be only a special case of a more general law. Sodium ions are univalent, while calcium ions are bivalent. He tried to determine whether or not he could produce the same effects by the addition of any other bivalent ions besides calcium. He found, indeed, that the addition of a trace of any of the following ions—strontium, magnesium, barium, zinc, iron, cobalt and lead—acted in the same way. He found, moreover, that the addition of a trace of a trivalent metal ion had also antitoxic effects. For instance, when a small amount of aluminium chlorid or chromium sulphate was added to a five-eighths normal sodium chlorid solution, a number of eggs were able to form embryos.

But not only a pure sodium chlorid solution of a certain concentration was poisonous, but a pure solution of any salt was found to be poisonous. For instance, a pure solution of lithium chlorid, ammonium chlorid and potassium chlorid of a certain strength was also poisonous. It was found that a solution of any of these salts which prevented the development of an egg could be rendered harmless by adding a small amount of all or some of the bivalent metal ions mentioned above. A pure solution of any of the salts of a bivalent, *e. g.*, $CaCl_2$, $MgCl_2$, etc., was also poisonous. Such solutions could be rendered harmless by the addition of a comparatively large quantity of a univalent metal ion or a very small quantity of another bivalent or trivalent metal ion. While the poisonous qualities of a solution of any salt could be annihilated by the addition of small quantities of a trivalent or bivalent metal ion or large quantities of a univalent metal ion, the anions were found to have no antitoxic effects whatsoever.

So far as the interpretation of these phenomena is concerned, the speaker pointed out the fact that such an influence of the quantity and sign of the electrical charge of ions has been found by physicists in connection with the phenomena of coagulation and the viscosity of colloidal solutions.

Dr. Loeb drew attention to the fact that from the point of view of the pathologist these experiments are of special interest as some of the observations are very analogous to the observations made by Ehrlich and his pupils in their study of antitoxins and immunity. Two facts of this character may be mentioned: 1. There is a numerical relation between the NaCl used and the amount of Ca-ions needed to counteract the poisonous effects of the sodium ions. The greater the concentration of the sodium salt present, the more calcium is required to render the solution of the sodium salt harmless. 2. In some cases the calcium (or strontium, etc.) can only produce its antitoxic effects if a trace of a second class of ions (for example, potassium) is present. This proved to be the case in experiments on the eggs of the sea-urchins. Neither the potassium alone nor the calcium alone were able to counteract the poisonous effects of a pure NaCl solution,

but both together were effective. The potassium ions act in this case like the "immune body" in Ehrlich's experiments.

A Case of Myiosis Intestinalis in Man.

DR. ALBERT PEACOCK reported this case. The patient, who came in from the country, complained of abdominal distension and excessive appetite. The existence of tapeworm was suspected. On examination of the feces the fly-larvæ were discovered. Specimens of the larvæ were placed under the microscope and demonstrated to the Club.

DR. L. F. BARKER said the case reported is of unusual interest on account of its rarity. Invasion of the human body by larvæ of insects has frequently been reported; the nasal pharynx, the external ear, the skin and open wounds and ulcers, are most frequently involved. The existence of larvæ in the stomach and intestines of human beings occurs, however, much less frequently.

Invasions of the body by fly-larvæ are most common in hot countries, and it is in the text-books of tropical diseases that we find the fullest accounts of them. Scheube in the new edition of his work, distinguishes three principal varieties: 1, those due to larvæ of Lucilla macellaria, so-called "screw worms"—these appear to be allied, if not identical with the Musca anthropophaga and the Sarcophila Wohlfahrti of other authors; 2, Dermatobia noxialis, or so-called beef worm, identical, in all probability, with the Oestrus Guildingi of Hope—these give rise to boils in the skin; 3, Ochromyia anthropophaga, the larvæ which so often affect the skin of natives of Senegambia.

Sandahl of Stockholm has reviewed the bibliography of myiosis intestinalis with special reference to the cases occurring in the Swedish literature. He finds instances where the larvæ are those of flies (myiosis), others where the larvæ are those of beetles (canthariosis), and again others where the larvæ are those of butterflies (scolechiosis). He lays most emphasis upon the case carefully reported by Lampa in 1887. In this instance the patient on July 4 discovered creeping larvæ in the stools, which were recognized by Lampa as insect larvæ. They were washed in water, put into a box containing some earth and given food. Two weeks later several adult flies developed, and these were recognized by Holmgren as belonging to the species Aricia (Holmalomyia) scalaris and A. manicata. Lampa believed that the larvæ had their origin in the eggs deposited by flies on cold food which had been insufficiently protected and which was eaten without re-cooking.

Care must be taken to distinguish true myiosis intestinalis from instances where fraud has been perpetrated. In the older literature several remarkable instances of the latter type are recorded. Thus Acrel, in 1799, refers to a woman of 30 who, during two years, voided no less than 130 Ascaris Lumbricoides, pieces of Tænia solium, and innumerable Oxyures vermiculares, in addition to 265, partly living, partly dead, Staphylinids of various kinds and several larvæ, among others, those of Tenebrio molitor.

The specimens presented by Dr. Peacock show some eleven segments, and at one border of each segment there is a narrow cuticular band covered with minute but very sharp thorns.

An attempt is being made to secure some of the living larvæ and to bring them to development in order that the species here concerned may be determined. Some idea of the way in which the parasite entered the body may then be gained.

Regular meetings of the Club will be held the first and third Monday evenings of each month.

CHICAGO ACADEMY OF MEDICINE.

Regular Meeting, held Oct. 11, 1901.

Dr. De Laskie Miller in the Chair.

Fracture of Inner Occipital Table.

DR. W. G. STEARNS reported a case of "Fracture of the Inner Table of Occipital Bone, with Cerebral Concussion and Contusion, Involving the Base of the Temporo-Sphenoidal and Frontal Lobes." An obese, well-nourished man, 40 years of age, was admitted to the Samaritan Hospital with the history of having been thrown backwards from a cable car, striking his head on the pavement. He was semi-conscious, but easily aroused and talked connectedly. He recognized friends, but had no knowledge of the accident. The scalp was cut one-half inch below the junction of the occipital and parietal bones in direct line with the sagittal suture, exposing the torn epicranium. The pupils reacted sluggishly; the left pupil was a trifle less contracted than the right. There was no loss of power in the limbs, and the reflexes were normal. There was intense pain in the frontal region from the time of injury, and persistent vomiting continued for forty-eight hours, when he was removed from the hospital. For a week after the injury he was in a dazed semi-conscious state, and often complained of severe headache. As he regained consciousness, aphasia and amnesia became evident. There was much irritability and some incoherence. He was admitted fourteen days after the injury to the Oakwood Sanitarium, where he was found to be extremely restless, with grandiose ideas and speech. His memory for recent events was defective, and his answers were not relevant until questions were several times repeated. His gait was reeling and uncertain. His handwriting showed frequent substitution of letters, but no tremor. This condition continued until the evening of the sixteenth day after the injury. He died on the morning of the seventeenth day after the injury, and was found lying on his left side, left leg, thigh, elbow, wrist and fingers being semi-flexed and flexed.

As the patient was carrying large amounts of accident insurance, a necropsy became necessary, and was made by Drs Stearns and Kiernan. This revealed a thin partially organized clot loosely adherent to the inner surface of the dura over the convexity of the left frontal lobe, and extending downward anteriorly. Upon removing the brain this clot was found to extend downward, covering the entire left middle fossa, and to be from one-eighth to three-sixteenths of an inch thick in its thickest portions. A similar clot was found covering the floor of the left middle fossa, and another covering the upper surface of the left tentorium. Slight mottlings of similar but much thinner clots were found in the right middle and anterior fossæ, and a few were also found in the posterior fossæ. The cerebro-spinal fluid was moderate in amount and bloody. The pia was slightly opaque over the convexity, and the median portion of the basal surface. It strips freely except over areas of softening, where it is adherent. The basal arteries and the cranial nerves are normal. The cortex presents an area of softening on the anterior tip of each frontal lobe extending backwards along the basal surface, including that portion adjacent to the longitudinal sulcus. The lesion is deeper and more extensive in the left lobe. Also an area of softening along the anterior portion of the basal surface of each of the temporo-sphenoidal lobes. Convolutions deep and otherwise normal. The fluid of the ventricles was under but slight pressure and was blood-stained. Ependyma normal throughout. All fiber tracts, basal ganglia, cerebellum, pons and medulla normal. On stripping the dura from the base of the skull there was found a linear fracture of the inner table, beginning at a point one-half inch to the left of the median line about two and one-half inches above the torcula, extending downward and to the right, crossing the median line at a point midway between the torcula and the foramen magnum, terminating in the foramen magnum, just to the right of the median line. A second linear fracture, also of the internal table, joined the first at an acute angle at its upper extremity, coursing to the left at first in the line of the lambdoidal suture, then going below it and passing just above the base of the petrous portion of the temporal bone, terminating at about the middle of the outer surface of the temporal fossa.

That portion of the bone on the surface opposite to that which receives the impaction is first put upon tension, therefore first fractured, while the surface receiving the impaction is compressed until its foundation, the underlying medullary portion or the opposite portion, gives way to the strain, and allows the stress to come upon it when, in turn, it is fractured. It is the external surface of a rib which receives an impact from

a flat body, therefore the inner surface first placed upon strain is first fractured, and if force be not too severe, this is the only portion fractured. Similarly, the external table receiving an impaction applied over a large area becomes compressed, not only beneath the area receiving the impaction, but the contact area supporting it, just as the weight resting upon a keystone is transmitted to each stone in its arch. If the force be sufficiently great, the diploë upon which it rests, or the internal table, or both, must give way before the external table can.

Dr. A. H. Ferguson stated that it was admitted in surgery that an impact received upon any part of the skull would not only produce a fracture of the inner table of the opposite side, especially if the impact was strong enough, but it was capable of producing laceration of the membranes of the brain and laceration of the brain itself. This point was clearly brought out by Bryan in experimental work on the cadaver, who found that fracture could be produced by *contre-coup*, with laceration of the membranes of the brain and severe damage to the brain substance itself. Recently Macewen, of Glasgow, had asked Dr. Ferguson whether the chisel and hammer had been discarded in surgery on the brain in the United States. Impact of the hammer in Macewen's opinion had a deleterious effect on the brain. Macewen had traced strange cerebral symptoms following the use of the hammer in a few cases. Dr. Ferguson mentioned a case in which there was severe injury to the brain, with no evidence of external fracture. Fracture, whether of the external or internal table, was the minor part of the injury. He was convinced that a case like this ought to be trephined, the surgeon removing a small button of bone in three places, one where the impact was received, one exactly opposite the frontal lobe, and when symptoms were present of pressure upon the sphenoidal lobe there was no harm in removing a little button of bone there. It was comparatively easy to ascertain whether clots were present, and these could be removed sometimes with great benefit.

Dr. Sydney Kuh had a number of years ago seen a boy, 13 years of age, who was thrown from a horse, striking on the right side of his skull. There were indications of a skull fracture, but no definite symptoms at that time which made it possible to localize a lesion. Five or six days after the injury the patient developed a very characteristic Jacksonian epilepsy, which was limited to the facial muscles and to the right side, that is, on the same side on which the injury had occurred. The condition of the patient became so grave that it seemed very essential to do something in order to prevent death. Dr. Steele was called in and trephined over the left focal area (the face center), and found in that region an area of softening not larger than a dime. The opposite side of the skull, on which there was a contusion, showed a break in the integument, and gave evidence of a fracture. This case illustrated that the opposite side of the brain may be affected. Had the suggestion of Dr. Ferguson been followed in this instance, the area of softening could not have been removed with any degree of benefit to the patient, and the termination of the case would have been fatal.

Dr. Hugh T. Patrick was somewhat surprised by the trend of the discussion, since he had supposed the view was universally accepted that an injury or blow of the head was apt to cause more trouble on the opposite side than on the side on which the blow was received. This was particularly true of injuries inflicted with large bodies. A quick, sharp blow from a small body, which resembled a projectile, was more apt to cause trouble at the point of impact, but it is particularly those cases in which the individual falls, striking upon the head, or in which a large body falls upon the individual, where the injury of the brain is more diffused and apt to be found in localities other than at the point of impact. Some years ago the speaker showed at the Chicago Medical Society the brain of a man who, while intoxicated, fell and shortly became comatose. Dr. Patrick saw the case with a surgeon. Although patient was profoundly comatose, it was evident that one side of the body was more paralyzed than the other. An operation was undertaken, the surgeon being guided by the focal symptoms. The point of impact was not discovered until, at the necropsy, a clot was found and a considerable amount of it removed. At the postmortem examination a severe injury of the brain was found upon the side opposite the point of impact. But upon the same side of the brain there was also a larger clot, the one on the side where the injury was more severe, being not only a large superficial clot, spreading over a considerable area, but it burrowed deeply into the brain. This part of the clot was not removed.

Dr. Patrick pointed out that unless a linear fracture happened to rupture a large vessel, which was not enclosed in bone, or unless the fracture involved a foramen through which passed a cranial nerve, linear fracture of the skull was quite as harmless as a scalp wound. Whether linear fracture was found postmortem or diagnosed during life was a matter of small import, forensic or otherwise. The linear fracture in the case reported by Dr. Stearns had nothing to do with death. He disagreed with Dr. Ferguson and claimed that a safe rule, surgically speaking, in such cases was to be guided entirely by focal symptoms, not by point of impact of the injury, nor by any laceration, or one of the thin spreading hemorrhages over the surface.

Dr. Edward H. Lee said that linear fractures of the inner table did not give rise to symptoms except where lesion of some blood vessel occurred. The blood vessel most frequently injured in such cases was the middle meningeal. Its injury was frequently associated with a fracture of the inner table, so that a bending fracture of the skull resulted in the occipital region, which produced a linear fracture of the inner table, associated with basal fracture. The basal fracture was in direct communication with the lesion. He could not see how fracture of the inner table of the opposite side of the skull could be produced from mechanical factors. This seemed to him an impossibility. He did not think cases existed to show that such lesions resulted. Operative intervention in such cases was absolutely contraindicated. He had treated many skull cases in the last ten years, but unless there were absolute indications for opening the skull, he did not do so. He recalled four or five cases at the Alexian Brothers' Hospital, in which there were depressions of the skull. In a case of quite extensive compound fracture of the skull, he simply relieved the depression. In three others, two of which were children, he left them alone. He did not even relieve the depression, although it was quite marked at the time. These patients had done well since. In the absence of focal symptoms, it was bad surgery to interfere where there were no other absolute indications. While these lesions might be followed by Jacksonian epilepsy, he would rather take his chances of non-interference than to convert a simple fracture into a compound one, exposing a patient who was suffering from such a severe cerebral lesion, possibly associated with a fracture of the base to serious after-results in consequence.

Necessity of Exact Diagnosis in Prostatic Operations.

Dr. Louis E. Schmidt, to obtain a clear view of the subject, classified all cases under three large categories: 1, urinary retention due to prostatic changes may occur when there are alterations in the prostatic urethra proper; 2, when the cause is just on the border between urethra and bladder; 3, when the pathologic changes in the gland impair or completely abolish the functions of the bladder. First, it is a well-established fact that the prostatic part of the urethra sometimes becomes greatly obstructed, so that urination becomes impossible. It may be due to a nodular growth of the urethral part of the prostate compressing the urethral walls, or causing a tortuous passage in the same. It is readily understood in these cases that every operation which involves that part of the prostate within or adjoining the bladder would not result favorably. Examination per rectum shows these nodules just within the anus, covering or only partly covering the rectal surface of the gland. The nodules may be positively diagnosed with metal instruments per urethra. It is an absolute necessity to remove these mechanical obstructions to effect good results. Second, the type of obstruction between bladder and

urethra, i. e., that borders on the internal urethral orifice, may be either a symmetrical thickening or enlargement of the prostate as far as the parts encircle the internal urethral opening or a partial enlargement of single lobes. All these changes have in common that the obstacle to urination is a more or less complete barrier, practically separating the trigonum from the urethra. An operative success is to be sought for in a method by which this barrier is completely removed or is severed to such an extent that again free communication between the *bas fond* of the bladder and urethra is made. A correct diagnosis without incising the bladder can only be made with the cystoscope. If the surgeon confines himself in such cases to the typical Bottini incision, the result will always be incomplete. It is necessary to make a large number of incisions into the barrier or to make a complete incision of the collar-shaped hypertrophy after opening the bladder. Third, another cause for the obstruction to the flow of urine by changes in the prostate is the formation of large prostatic tumors which grow into the cavity of the bladder. In rare cases the surgeon might succeed in getting these tumors between the fingers by bimanual palpation and so make a diagnosis. This is only possible in very thin individuals with relaxed abdominal walls. A radical cure in such cases can only be accomplished by complete removal of such prostatic tumors by means of a suprapubic operation. If the general condition of the patient does not permit of such interference, nothing remains except to establish a permanent fistula. If the mechanical condition is considered in such a case, such a fistula can only be an abdominal one.

DR. JAMES T. JELKS, Hot Springs, Ark., had not been an advocate of the Bottini operation, for the reason he wanted to see what he was doing. With the old Bottini instrument the operator worked in the dark. He had been in the habit of doing the Alexander operation or a modification of it. According to the statistics of Willy Meyer, the mortality from the Bottini operation was 11 per cent. The mortality of operations done by Bottini himself was 10 per cent. The mortality from the old operation of vasectomy was 20 per cent., and that of castration 22 per cent., so that the Bottini operation had decreased the mortality rate. He had taken it for granted that the mortality following these operations had been from general anesthesia, and if Schleich's method could be used the mortality would be much less.

DR. WILLIAM L. BAUM expressed the belief that with the new modifications which have been made in the Bottini instrument, it would have a larger field of usefulness. The great objection that had always been made to this method of operating was the inability of the operator to see how far and how much destruction of tissue he was accomplishing. In cases of doubt he preferred the Alexander operation, knowing that at the present time its mortality was somewhat less, and it possessed the double advantage of being an operation whereby its steps could be watched both through the suprapubic incision and through the perineal.

DR. A. H. FERGUSON narrated a case of enlarged prostate in an old man upon whom he practiced rapid dilatation some twelve years ago. The patient has remained well up to this time. He believed that the proper use of bougies in these cases would do good, and should be judiciously tried in a limited number of instances. He advocated the perineal operation for the treatment of prostatic enlargement. He was not favorably impressed with the Bottini operation for several reasons, one of the most important of which was hemorrhage. He had lost one case by the Bottini method. He preferred the perineal route, and showed an instrument which he uses in doing this operation.

THE DENVER AND ARAPAHOE MEDICAL SOCIETY.

Regular Meeting, held Oct. 8, 1901.

Dr. H. G. Wetherill in the Chair.

Pernicious Anemia.

DR. G. E. TYLER reported the following interesting case: I. B. C., male, 47 years of age, painter, was a hard drinker for twenty years. Never had any digestion trouble until two years ago, when his appetite began to fail and he had occasional attacks of constipation. He then noticed trembling of the legs and a tremor of the right hand. He also suffered from cough and profuse expectoration. The gums and mucous membrane of the lips were bloodless. There was slight edema about the ankles. He did not appear emaciated; no lead line on the gums. Abdomen, liver and spleen were normal. Heart and lungs were negative. Knee-jerk was increased. Two small retinal hemorrhages were noticed in right eye. His temperature on admission to County Hospital, Sept. 9, 1901, was 100.2, but in a few days became normal. He was very weak and desired to remain in bed. Four days after admission he had a profuse hemorrhage from the bowels. Red blood corpuscles, 800,000; white, 4,000; hemoglobin, 40 per cent.; color index, 2.3. Two days later: red, 1,760,000; white, 7,000; hemoglobin, 42; color index, 1.2. Seven days later: red, 2,232,000; white, 8,000; hemoglobin, 42. A differential count of 1,000 white blood corpuscles gave the following percentage: polymorphonuclear, 82.3; small non-nuclear, 13.5; large mononuclear, 2.2; transitional, 1.1; eosinophiles, 0.9. Urine; no albumin or sugar, indol present. Gastric contents: HCl absent, lactic acid present, starch absent, sugar present, rennet absent, pepsin absent. Opler-Bond bacillus and sarcinæ were present. The patient showed some improvement on administration of Fowler's solution in rigidly increasing doses, which he considers to be temporary.

Papilloma of the Larynx.

DR. T. J. GALLAHER said that the small light-red tumors yield to local application. He used formalin with good results. The large red variety calls for cutting forceps. He considers intubation a dangerous procedure, as it may result in pressure necrosis or infection pneumonia. Tracheotomy has been done in young children and they were allowed to wear the tube for years. The two specimens shown were situated in the left vocal cord and at the time of their removal were of the size of a bean. The raw surfaces cicatrized promptly.

Edema of the Larynx.

DR. T. J. GALLAHER does not favor intubation in cases of edema of the larynx unless the operator is within constant reach. The tube does not engage deep enough and is therefore extruded. The necessity of frequent reintroduction of the tube increases the swelling. Edema may occur directly around the tube. Scarification and multiple punctures are disappointing. Ice pack or hot fomentations have no value. If not treated promptly and heroically edema of the larynx is fatal. If adrenalin is used it should be by spray, and kept up persistently at short intervals. Intubation should be done as an immediate measure to bridge over the time until an aseptic tracheotomy could be performed. Case: physician, 29 years of age, was suffering from acute articular rheumatism. On the eighth day at midnight he was seized with acute edema of the glottis. He introduced a tube at 1 a. m.; at 4 a. m. it was expelled and reinserted. During the next twenty-four hours the tube was expelled and reinserted six times. Recovery was prompt and uneventful.

DR. ROBERT LEVY reported two cases of papilloma in adults. One patient was hoarse for four years and was advised to come to Colorado. He removed the growth from the anterior commissure. In the other case, who suffered from great dyspnea, he performed tracheotomy. He has seen three cases in children since 1895. One was treated by intubation. The other two cases were treated for croup and asthma respectively. One was treated by intubation followed by tracheotomy, and the other by the application of salicylic and glacial acetic acid. All the cases recovered.

Specimen from an Unusual Ectopic Pregnancy.

DR. H. G. WETHERILL reported the following case: When seen the first time, she was suffering from severe pain and hemorrhage from the uterus. Her temperature was 100. In a few days all the symptoms disappeared. In the right iliac region a mass was detected by bimanual palpation. She gave history of miscarriage, which occurred three weeks previous.

Two weeks after she had another hemorrhage and severe pains; the mass increased in size. A pelvic abscess suggested itself. A vaginal incision was made and blood and clots were found. The sac was washed out with salt solution and packed with iodoform gauze. Two weeks after there was a sudden attack of intense pain and evidence of concealed hemorrhage was manifest. The abdomen was opened, but no blood found. The broad ligament was found distended to the size of a child's head, not unlike an intraligamentous cyst. When the sac was opened a full-grown fetus was found. The appendix was found grown into the mass and was removed. Before the operation the patient was very weak; indeed, her life was despaired of. As soon as the anesthetic was given, salt solution by hypodermoclysis was administered into the breasts, three pints being used during the operation. A hot salt solution was introduced into the abdominal cavity while she was placed in the Trendelenburg position so that the solution might come in contact with the diaphragm. After the operation her condition was such that it was necessary to introduce salt solution intravenously. The patient made a slow recovery, and is at present in a satisfactory condition. He thinks it was originally a tubo-ovarian pregnancy which ruptured into the broad ligament.

Dr. W. P. Munn suggested that it might have been an ectopic gestation co-existing with uterine pregnancy. Such cases are on record.

MEDICAL SOCIETY OF VIRGINIA.

Thirty-second Annual Session, held in Lynchburg, Nov. 5, 1901.

The President, Dr. John R. Gildersleeve, Tazewell, called the meeting to order and after prayer by the Rev. F. T. McFaden, Dr. Rawley W. Martin welcomed the Society in behalf of the fraternity and the city.

Dr. Smelt W. Dickinson, Marion, delivered an address on the delusions in medicine from the days of astrology and witchcraft down to the modern time of eddyism, osteopathy and magnetic healing.

Re-organization.

The President then delivered his annual address in which he congratulated the Society on meeting for the third time in Lynchburg, its birthplace. He directed the attention of the Fellows of the Society to a resolution passed in 1896 providing that members of the Society should not examine an applicant for life insurance for less than $5.00. He recommended strongly the strengthening of the bonds existing between state societies and the American Medical Association and suggested membership in that "grand, national, representative, medical organization." He suggested in addition that the plan adopted by the American Medical Association for the conservation of time should be adopted, for the obtaining of better results by devoting the morning of each day to general business, one subject and its discussion. That the first evening and succeeding afternoons should be devoted to section work, and the succeeding evenings to social functions.

Dr. J. N. Upshur, Richmond, at the second day's session, offered a resolution to amend the clause in the constitution regarding membership as to limit it to physicians who live in Virginia, who are white and 21 years of age or over. A substitute was offered by Dr. Styll, Newport News, that the amendment take the usual course and lay over for three months, which was carried by practically an unanimous vote. A motion was adopted unanimously that all local medical societies submitting to the Code of Ethics of the American Medical Association should be officially recognized by the State Medical Society.

Scientific Papers.

The discussion of the morning was on uric acid and papers were read by Drs. William S. Gordon, Richmond, and Lewis E. Pedigo, Roanoke, on this subject. Gastro-intestinal therapy was the principal subject for discussion of the afternoon session, the leading paper being read by Dr. John N. Upshur, Richmond.

Report of Special License Committee.

At the evening session the report of the Special License Committee was made by Dr. J. Beverly Deshazo, Ridgeway. This committee was appointed at the last meeting of the Society to endeavor to obtain a repeal of the special license tax on physicians. It has circulated 500 pamphlets in the counties and cities of the state for signature, asking for the repeal of the law and thus far has met with practically no opposition. About 2000 physicians are in favor of the plan, but only 15 or 20 thus far have opposed it. He recommended that headquarters be established in Richmond to further the plans of the committee and private subscriptions be made to defray the necessary expense.

Delegates to American Medical Association.

The third day of the session commenced with the election of the Virginia members of the House of Delegates of the American Medical Association. Drs. John R. Gildersleeve, Tazewell, and Landon B. Edwards, Richmond, were unanimously elected delegates for the long and short term respectively. Drs. Livius Lankford, Norfolk, and Rawley W. Martin, Lynchburg, were elected alternates.

Election of Officers.

The election of officers resulted as follows: Dr. Richard S. Martin, Stuart, president; Drs. Livius Lankford, Norfolk, R. Sumter Griffith, Basic City, and Smelt W. Dickinson, Marion, vice-presidents; Dr. Landon B. Edwards, Richmond, recording secretary; Dr. John F. Winn, Richmond, corresponding secretary; Dr. R. T. Styll, Newport News, treasurer, and Dr. John N. Upshur, Richmond, chairman of executive committee. Newport News was chosen as the place of the 1902 meeting, and Dr. Robert L. Payne, Norfolk, was elected to deliver the annual address.

Medical Examining Board.

The Medical Examining Board elected for the ensuing year was as follows: Rawley W. Martin, Lynchburg; William L. Robinson, Danville, and Albert S. Priddy, Marion, from the state at large. From the Congressional District: Drs. Willard B. Robinson, Tappahannock; Herbert M. Nash, Norfolk; Junius E. Warrinner, Brook Hill; Otho C. Wright, Jarratt; Richard S. Martin, Stuart; Samuel Lile, Lynchburg; Robert C. Randolph, Boyce; Robert M. Slaughter, Theological Seminary; Elliott T. Brady, Abingdon, and Charles W. Rodgers, Staunton.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Prescription Writing—Continued.

II. The symbol ℞ is an abbreviation of the Latin *Recipe*, "take thou." The line drawn across the right lower part of the ℞ is said to have been taken from the sign used to indicate Jupiter in the pagan invocations to that god. This ancient mingling of religion with the healing art serves to explain the universal acceptation by the early physicians of the symbol as an awe-inspiring superscription to their formulas.

The direct object of "Recipe" is drachmam or unciam, etc., of the ingredient, as the case may be. Consequently the names of all the ingredients should be written in the genitive case with their proper endings. These ingredients may be made up of a basis, an adjuvant, a corrective and a vehicle or excipient.

We wish to emphasize the importance of giving the names of the preparations their proper endings. The inability of the physician to write these names in the proper case and in the

proper declension, is an evidence of lack of a good preliminary education.

To illustrate, we give a prescription representing the different endings as follows:

℞.	Tincturæ nucis vomicæ	3iss	6
	Acidi hydrochlorici diluti	3i	4
	Syrupi simplicis	3iii	12
	Spiritus frumenti q. s. ad	℥ii	64

Misce et fiat mistura. Sig.: One teaspoonful after each meal.

In the above it will be seen that in the first preparation, those words ending in *a* are of the first declension and consequently their genitive ending is *æ*, while the word *nux* belongs to the third declension and the *x* (that is, *cs*) is changed into *cis* in the genitive.

In the second ingredient "acidum" is a neuter noun of second declension and therefore should be written acid*i* in the genitive and the words "hydrochloricum" and "dilutum" being adjectives must agree with the noun they limit in the proper gender and case.

In the third preparation "syrupus" being a masculine noun of the second declension, it is changed into the genitive and is therefore written syrup*i* in the prescription form.

In the last ingredient, "spiritus," although ending in *us* is not of the second declension; but, as an exception to the rule is of the fourth declension and consequently the ending does not change in the genitive.

Further dwelling upon these points, we might observe that nouns of the first declension end in *a* and the ending is changed into *æ* in the genitive; the accusative takes the ending *am* in the singular and *as* in the plural. As far as the nouns concerned in expressing medicinal terms, they end in *us* or *um* in the second declension in the nominative case and *i* in the genitive, as illustrated in the above prescription. However, there are few exceptions to this rule. These exceptions end in *on* in the nominative and *i* in the genitive; as for example "erythroxylon," "hematoxylon" and "toxicodendron."

There is a greater variety of endings in dealing with nouns of the third declension. The great majority, however, end in the nominative singular in one of the following letters: o, l, n, r, s, and x. We give a few of the nouns as follows for sake of illustration:

NOMINATIVE.	GENITIVE.
Mucilago.	Mucilaginis.
Alcohol.	Alcoholis.
Albumin.	Albuminis.
Æther.	Ætheris.
Salicylas.	Salicylatis.
Rumex.	Rumicis.

(To be continued.)

Treatment of Glaucoma.

The following is recommended by *Merck's Archives* in the treatment of glaucoma:

℞.	Eserinæ salicylatis	gr. 1-6	01
	Pilocarpinæ hydrochlor.	gr. iii	20
	Cocainæ hydrochlor.	gr. iss	09
	Aquæ destil. q. s. ad	℥ii	64

M. Sig.: One or two drops into the eyes at bedtime.

Treatment of Diabetes.

It is stated by van Noorden, in *Wiener Klin. Wochenschrift*, that the tolerance of the system for carbohydrates in diabetes is very much increased by the use of salicylic acid. This is unusually beneficial in those who tolerate from 100 to 150 grams of bread.

Chloretone in Surgery.

The administration of chloretone before ether or chloroform anesthesia with a view of preventing nausea and vomiting during and after surgical operations, is recommended by Dr. Hirschman, in the *Ther. Gazette*. He gives doses of 10 grains to women and to boys under 16 years of age, and 15 grains to men. This is given one-half hour before commencing the anesthetic. He gives it in powder form, dry on the tongue, washing it down with water.

Patients treated in this way, the writer states, have but little or no stage of excitement; about one-third or one-half less of the anesthetic is required only, and the patient is less apt to come out of the anesthesia suddenly during the operation should the administration of the anesthetic be relaxed. He makes the statements based upon a comparative study of sixty cases, half of whom received chloretone and the other half none.

Treatment of Gastralgia.

Gastralgia produces symptoms which may be mistaken for other and graver conditions, such as carcinoma of the stomach, gallstones, appendicitis, chronic mucous gastritis, etc. If these can be eliminated in the diagnosis Melbec, as noted in *N. Y. Med Jour.*, recommends the following outline of treatment:

When an attack is threatening take alternately in tablespoonful doses the following mixtures:

℞.	Cocainæ hydrochlor.	gr. ivss	25
	Tinct. illicii	m. xv	1
	Aq. aurantii flor	℥iii	96

M. Sig.: One tablespoonful every half hour, alternating with the following:

℞.	Aq. chloroformi (saturat.)	℥ii	64
	Syr. belladonnæ		
	Aq. menth. pip. ãã	℥i	32

M. Sig.: One tablespoonful every half hour.

If the pain persists and is very severe, give a hypodermic injection of the following, repeated within a few minutes if necessary:

℞.	Cocainæ hydrochlor.	gr. ¾	045
	Morphinæ hydrochlor.	gr. iss	09
	Aq. destil.	℥iiss	10

M. Sig.: Eight minims hypodermically and repeat in fifteen minutes.

In the intervals between the attack seek the cause, chlorosis, neurasthenia, etc. Give daily alcohol baths and follow with rubbing with a hair glove. Take every other day the following mixture:

℞.	Strontii bromidi	℥v	20
	Syr. hyoscyami	℥ii	64
	Syr. aurantii	℥ii	64
	Aq. destil.	℥v	160

M. Sig.: One tablespoonful in water every other day.

Counter-irritation should be made over the epigastric region by means of the actual cautery. This should be applied about once a week.

Salol in Smallpox.

Dr. C. Begg, in a paper read before the Medical Society in Edinburgh, states that beneficial effects are produced by salol, inasmuch as, 1, it tends to abort the pustular stage; 2, it tends to diminish the irritability of the patient, and 3, it prevents the giving off of an unpleasant odor. As soon as the vesicular stage is completed Dr. Begg applies the following locally:

℞.	Ol. eucalypti	m. v	30
	Calaminæ	℥iii	12
	Zinci oxidi	℥ss	16
	Glycerini	℥ss	16
	Aq. calcis q. s. ad	Oi	512

M. Sig.: Apply gently with a camel's hair brush.

In prescribing salol he usually gives it in doses of 15 grains three times a day, beginning with the appearance of the first eruption and continuing it until the stage of desquamation is finished.

Methyl Blue in Smallpox.

Prof. Matoni, in *Arte Medica*, states that he has obtained very satisfactory results from the use of methyl blue in the different stages of smallpox. In the pustular stage he administers it in divided doses amounting to 6 or 8 grains daily. In this stage his results have been especially satisfactory.

Removal of Warts.

It has been recommended that the removal of warts be done by means of electrolysis, first injecting them with a 4 per cent. solution of sodium chlorid. This, it is claimed, promotes electrolytic action by cutting down the resistance in the

tissues at the same time favoring the destruction of tissue by the formation of caustic soda.

Medicolegal.

Aggravation of Injury by Improper Treatment.—The Appellate Court of Illinois, First District, holds, in Chicago City Railway Company vs. Cooney, that if the negligence of the company was the direct cause of the injury in question, and it was simply aggravated by some improper treatment by medical attendants through no fault of the injured party or lack of care on her part in selecting such attendants, then the mere fact of such aggravation of the injury would not preclude a recovery for the injury in the suit against the company.

Surgeon Prevented from Reducing Dislocation.—The Appellate Court of Illinois, Third District, holds, on the second appearance before it of Littlejohn vs. Arbogast, that if the surgeon charged with malpractice was prevented from reducing the dislocation of his patient's hip by the refusal of the latter to submit to an operation, he could not be held liable for damages resulting therefrom. It is the duty of a patient, it holds, to submit to the necessary treatment prescribed by his physician or surgeon. If the patient is delirious and can not be made to understand the necessity of the treatment proposed, the physician or surgeon may co-operate with the patient's immediate family and resort to reasonable force. If the patient is in that condition and the members of his family having him in charge refuse to allow the proposed treatment, then the physician or surgeon would not be required to use force. Surely, he should not be held liable for injury to limb or health resulting from a failure to use the proposed treatment.

Nature and Limitations of Physician's Claim.—The Supreme Court of Alabama says, in Morrisett vs. Wood, that the nature of the demand of a physician for medical services rendered without a special contract therefor is simply an implied promise to pay what such services are reasonably worth, and the proper action for their recovery is what is called assumpsit for such compensation as may be shown by the evidence that the physician rendering the services ought to receive. This demand, in the absence of a special contract as to what shall be paid, is an open account. In an action for its recovery it is difficult to escape the conclusion that an account is not the foundation of the suit. Such a demand is subject to the bar of the statute of limitations of Alabama of three years, as provided by statute against open or unliquidated accounts. This defense of the bar provided by the statute can be made because the basis or foundation of the claim is an account which has not been stated. And the court says that it can draw no distinction between the word "account" as used in the statute of limitations of three years and as employed in the section as to a bill of particulars, which provides that at any time previous to the trial, upon notice to the attorney of the party suing, the one sued may have a list of the items composing it, when an account is the foundation of the suit. It means the same in both sections. Therefore, the court holds that, in this case, which was brought by a physician against an executor of an estate to recover for medical services rendered the decedent during his last illness, the contention was untenable that an account was not the foundation of his claims or demands, one of which was for such services, and the other for work and labor done for the decedent at his request. So it holds that the executor was entitled to demand a bill of particulars, or list of items composing the account. Then, this having been furnished, but the witnesses called to substantiate it not being able to verify any of the dates, the court holds that it was error to allow the physician to prove the value of his services by a hypothetical question based on the assumption that he had treated the decedent as often as a certain number of times a month between certain dates, as also that it was error to instruct the jury that under the claim for work and labor they were not limited to proof of the items given in the bill of particulars. The proofs, it holds, should have been limited to the bill of particulars as to the services rendered and the value of the particular items of services when shown.

Provision of Law as to Examination Upheld.—The Supreme Court of Wisconsin says that the gravamen of the relator's complaint, in the case of State ex rel. Kellogg vs. Currans and others, was that he was refused a license to practice medicine in Wisconsin except upon the condition of passing an examination before a medical board created therefor, and paying a fee which must be considered as but compensation for the service of holding that examination. It appears that he matriculated in 1897, and took one course of six months at a reputable medical college of Wisconsin, and then completed his course at a reputable medical college located in Chicago. As the law was in Wisconsin until its amendment in 1901, he would have been entitled to a license to commence practice either on the diploma he obtained, or upon passing examination. But the amendment makes both diploma and examination prerequisite to license to beginners, with proviso that "any student who is now matriculated in any medical college of this state which requires [specified courses of study], shall, on presentation of his diploma from such medical college and on payment of the fees specified in this act, be admitted to practice without further examination." "The fee for such examination shall be fixed by the board, but shall not exceed $10, and $5 additional for the certificate if issued." He strenuously attacked the validity of this statute. But the Supreme Court of Wisconsin does not think that it infringes either that provision of the federal constitution which provides that the citizens of each state shall be entitled to all the privileges and immunities of citizens in the several states, or the one which prohibits any state to make or enforce any law which shall abridge the privileges or immunities of citizens of the United States. Nor does it consider that it violates the provision that no state "shall deprive any person of life, liberty, or property, without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws." It declares that there can be no doubt that it is within the proper power of the legislature to provide that some people may and some may not practice medicine, provided that the characteristics and conditions distinguishing the former class from the latter are of a kind tending to make their exercise of that profession more beneficial or less perilous to the community than the class excluded. The reasonableness of a requirement that one establish his educational qualifications by submitting to an examination, it continues, is one which pertains directly to one of the characteristics which should distinguish those permitted to practice medicine from those not permitted. As to the statute making a class of those who should obtain the education afforded by the then existing medical colleges in the state of a specified standard, it asks: May not the legislature of 1901, upon evidence or investigation, have been convinced that such colleges could be trusted to give education to their graduates to make them safe practitioners, while they could not be so satisfied as to all colleges outside the state? The character of the men conducting the former class, the opportunity and right of the legislature to control and to prevent deterioration, the special applicability of the instruction to the diseases or phases of diseases characteristic of Wisconsin—might not considerations such as these have weight with honest and reasonable minds, and lead them to deem safer the graduates of such institutions, as a class, than those of all other colleges, as to the great majority of which the legislature could neither gain knowledge nor exercise any control? Wherefore, the court holds the act within the police power of the state. And it adds, in closing its opinion: "The fact, if it were a fact, that less educational requirements are demanded from osteopaths as preliminary to an examination by the board, in no wise affects the relator, whose qualifications for admission are, as he alleges in his relation, all conceded, except the passing of the examination. The question whether the requirement of a diploma is an unconstitutional one, as discriminating against those who by some other method of study have acquired equal education, is not open to the relator, who confessedly has his

diploma. We can not set aside the acts of the legislature at the suit of one who, suffering no wrong himself, merely assumes to champion the wrongs of others."

Current Medical Literature

Titles marked with an asterisk (*) are noted below.

Medical Record (N. Y.), November 9.

1 *Some Observations on the Symptomatology and Differential Diagnosis of Apoplexy; with the Reports of Several Illustrative Cases. Theodore Diller.
2 *Some Remarks on the Etiology of Apoplexies. W. K. Walker.
3 *Concerning the Clinical Significance of the Klebs-Loeffler Bacillus. Adolph Rupp.
4 An Unusual Case of Death from Ether Anesthesia, with Autopsy and Microscopic Study. Harlow Brooks.
5 *Practical Results with 1000 Cases of Nitrous Oxid and Ether Narcosis. H. W. Carter.

New York Medical Journal, November 9.

6 *The Treatment of Cutaneous Epitheliomata. Charles W. Allen.
7 *The Future of Gynecology as a Special Branch of Surgery. Ely Van De Warker.
8 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
9 *Muscular Atony an Important Factor in Uterine Displacements. Henry C. Coe.
10 *Devitalized Air Toxemia, a Prime Cause of Tuberculosis. Charles Denison.
11 Caries of the Spine: An Analysis of 1000 Cases. J. Hilton Waterman and Charles H. Jaeger.

Boston Medical and Surgical Journal, November 7.

12 *Medical and Sanitary Conditions in the Philippines. W. P. Chamberlain.
13 *The U. S. Army System of Personal Identification. C. H. Alden.
14 *On the Establishment of Medicolegal Diplomas. Wyatt Johnston.
15 The Erickson Murder. F. H. Baker.
16 Artificial Noses and Ears. Robert H. Upman.

American Medicine (Philadelphia), November 9.

17 *Trional Fatalities. Archibald Church.
18 *The Diagnosis and Treatment of Round Ulcer of the Stomach. N. S. Davis, Jr.
19 *The Nature of Internal Lesions in Death from Superficial Burns. John McCrae.
20 *The Bacteriology of Otitis Media: A Summary of Recorded Observations and a Laboratory Study of 76 Cases. (To be concluded.) John Funke.
21 A Case of Elephantiasis. John M. Bertolet.
22 Appendix Vermiformis Passed in Stool. W. L. Wallace.

Philadelphia Medical Journal, November 9.

23 *The Ultimate Results of Operation for Cancer of the Uterus. Charles P. Noble.
24 Chronic Ulceration of the Stomach Simulating Cancerous Disease: Relation of a Case of Gastro-enterostomy, with the Murphy Button, Recovery. James F. W. Ross and E. B. O'Reilly.
25 *The Surgery of Pulmonary Abscess, Gangrene and Bronchiectases, Following Pneumonia. Daniel N. Eisendrath.
26 *Report of Seventy Cases of Acute Lobar Pneumonia. J. N. Hall.

Medical News (N. Y.), November 9.

27 *Some Further Remarks on Hospital and Dispensary Abuses and Mismanagement, with an Account of the Means to be Employed to Mitigate or Arrest Them. Thomas J. Hillis.
28 *The Relation of Sunshine to the Prevalence of Influenza. Howard S. Anders.
29 A Case of Suppurative Otitis Media Following Influenza: Operation Without Opening of the Antrum; Complete Lack of All Constitutional Symptoms of Inflammatory Disease. O. Waterman.
30 A Case of Raynaud's Disease. W. A. Haley.
31 Three Obstinate Cases of Empyema of the Maxillary Antrum, Cured with Injections of Solutions of Nargol. A. G. Wippern.
32 *Treatment of Typhoid Fever. Basil M. Taylor.

Cincinnati Lancet-Clinic, November 9.

33 *Toxicity of Urine in Pregnancy. Robert W. Stewart.
34 The Action of the Condensed Light upon the Skin as a Therapeutic Agent. A. Ravogli.

St. Louis Medical Review, November 9.

35 *Dermoid Cyst of Testicle. C. C. Morris.
36 *Gunshot Wounds of the Pregnant Uterus. (Continued.) George Gellhorn.

Pediatrics (N. Y.), November 1.

37 *Radical Cure of Inguinal Hernia in Children. Harold J. Stiles.
38 *Diagnosis of Suppurative Pericarditis in Children. Frederick E. Batten.
39 *Observations on Suppurative Pericarditis in Children. George F. Still.
40 *On Essential or Toxemic Dropsy; Dropsy Without Albuminuria. W. P. Herringham.
41 *Ultimate Results of Tendon Grafting in Infantile Paralysis. Sinclair White.

Northwestern Lancet (Minneapolis), November 1.

42 Hemorrhoids. Arthur T. Mann.
43 The Desert Climate for Consumptives. R. M. Phelps.
44 Does the Practice of Medicine Pay? George R. Patton.

Illinois Medical Journal (Springfield), November.

45 Imperative Conceptions. Hugh T. Patrick.
46 Conservative Operations upon the Uterine Adnexa. Henry T. Byford.
47 Infection in a General Surgical Sense. Daniel N. Eisendrath.
48 Recent Developments in Our Knowledge of Cancer of the Uterus. Emil Ries.
49 The Clinical Laboratory in Private Practice. C. Martin Wood.

Medicine (Chicago), November.

50 *What Are the Qualifications Necessary for Success in the Practice of Medicine? Frank Billings.
51 *A Simple Means of Determining a Pretended Impairment of Vision in One Eye. E. F. Snydacker.
52 *The Importance of Exact Diagnosis in Certain Operative Prostatic Diseases. Louis E. Schmidt.
53 An Anomalous Form of Tabes—A Clinical Lecture. Harold N. Moyer.

Journal of Cutaneous and Genito-Urinary Diseases (N. Y.), November.

54 *Inflammatory Affections of the Nails. S. Pollitzer.
55 *Trophic Affections of the Nails. Joseph Zeisler.
56 *Parasitic Diseases of the Nails. Joseph Grindon.
57 *The Treatment of Diseases of the Nails. W. A. Hardaway.
58 *A Probable Cause of Failure in Internal Urethrotomy. G. Frank Lydston.

The Physician and Surgeon (Detroit and Ann Arbor), August.

59 Some Sociologic Problems of Medicine. Charles T. McClintock.

A SYMPOSIUM ON CERTAIN ABNORMALITIES OF GESTATION AND LABOR.

60 Malposition. Austin W. Alvord.
61 Renal Insufficiency. Rush McNair.
62 Neoplasms Complicating Pregnancy and Labor. James G. Lynds.
63 Rectal Obstruction. James A. MacMillan.
64 The Modern Management of Diphtheria. Alexander MacKenzie Campbell.
65 Fever—A Symposium. Hedley Williamson.
66 Pelvic Lesions: An Important Factor in Delaying and Preventing the Normal Menopause. Theodore E. Sands.
67 Inspection of the Rectum and Sigmoid Flexure by Mechanical Means. William L. Dickinson.
68 Osteomyelitis of the Femur. Alexander G. Graybiel.
69 Importance of Making a Thorough Examination of the Thorax in All Supposed Stomach Diseases. H. B. Garner.

Brooklyn Medical Journal, November.

70 Otitis, Sinus Phlebitis and Thrombosis. J. E. Sheppard.

American Journal of the Medical Sciences (Philadelphia), November.

71 *An Epidemic of Noma; Report of Sixteen Cases. George Blumer and Andrew MacFarlane.
72 *Some New Points in Regard to Raynaud's Disease. Carl Beck.
73 *Observations on the Frequency and Diagnosis of the Flint Murmur in Aortic Insufficiency. William Sydney Thayer.
74 *Osteitis Deformans. Frederick A. Packard, J. Dutton Steele and Thomas S. Kirkbride, Jr.
75 *Asymmetry of the Nasal Cavities. A. Coolidge, Jr.
76 A Case of Acute Leukemia Presenting Some Interesting Features. D. D. Stewart.
77 *Typhoid Cholecystitis, with Observations upon Gallstone Formation. Joseph H. Pratt.
78 The Operative Treatment of Paralytic Talipes of the Calcaneus Type. Royal Whitman.
79 *The Difficulties in Making a Diagnosis in the Bone Lesions of Nurslings. R. Tunstall Taylor.
80 Three Noteworthy Cases of Brain Injury. George T. Vaughan.
81 *Tuberculosis of the Portio Vaginalis and Cervix Uteri; Its Pathology, Diagnosis, and Treatment. Henry D. Beyea.
82 *Remarks on the Diagnosis of Some Forms of Ophthalmoplegia. L. F. Adt.
83 A Consideration of Certain Details in the Management of the Pregnant and Puerperal Patient. William R. Nicholson, Jr.
84 Fibroma of the Nose, with Report of a Case. William Lincoln.

85 *The Clinical Value of Blood Examination in Appendicitis; A Study Based on the Examination of 118 Cases at the German Hospital, Philadelphia. J. C. DaCosta, Jr.
86 *The Blood Count at High Altitudes. W. A. Campbell and H. W. Hoagland.
87 *Critical Summary of Recent Surgical Progress in the Diagnosis and Treatment of Contusions of the Abdomen. Francis T. Stewart.

Cleveland Journal of Medicine, October.

88 Intestinal Obstruction. F. E. Bunts.
89 Sinusitis Nasi and Otitis Media Following Influenza. J. M. Ingersoll.
90 Nitrous Oxid and Oxygen as a General Anesthetic. Ernest E. Brown.
91 An Unusual Case of Pott's Disease. William E. Wirt.
92 Some Facts on the Anatomy and Morphology of the Biliary Tract. C. A. Hamann.

St. Paul Medical Journal, November.

93 *The Present Epidemic of Smallpox in America. H. M. Bracken.
94 Some Indications for Gastro-enterostomy. Wm. J. Mayo.
95 Some Indications for Curettage of the Uterus and Technique of the Operation. J. A. Smeallie.
96 Rational Treatment of Constipation. J. R. Leadsworth.
97 Placenta Previa. R. C. Dugan.
98 A Few New Things in Medicine and Surgery. C. P. Thomas.

Toledo Medical and Surgical Reporter, November.

99 Some Reference to Surgery of Knee-Joint. A. F. McVety.
100 Report of Cases of Sciatic and Brachial Neuritis Treated with Static Electricity. Harry L. Hall.
101 The Therapeutics of Heroin. Louis Miller.
102 Cholera Infantum—Its Treatment. O. M. Main.
103 Case of Stenosis of Rectum; Treatment Inguino-Colectomy. Robert Peter.
104 Palpitation of the Heart. D. Jones.

Buffalo Medical Journal, November.

105 The Science of Medicine and the Healing Art. John L. Heffron.
106 Deafness from Scarlet Fever. Sargent F. Snow.
107 The Ethics of Nursing. George E. Blackham.
108 The Vermiform Appendix and Appendicitis. A. A. Young.
109 Normal Salt Solution by Hypodermoclysis, with Report of an Unusual Case. G. A. Himmelbach.

Alienist and Neurologist (St. Louis), October.

110 The Development of the Sexual Instinct. Havelock Ellis.
111 *The Physiological Mental Weakness of Women. J. P. Mobius.
112 Normal and Abnormal, Rational and Irrational, Healthy or Unhealthy Delusion. Charles H. Hughes.
113 The Physician's Duties in Committing Insane to the Hospital. Professor Hoche.
114 Degeneracy Stigmata as a Basis of Morbid Suspicion. Jas. G. Kiernan.
115 Juvenile Female Delinquents. Eugene S. Talbot.
116 The Legal Disabilities of Natural Children Justified Biologically and Historically. E. C. Spitzka.

Mississippi Medical Record (Vicksburg), November.

117 Abortion as a Disease of Pregnancy and as a Crime. H. A. Minor.
118 Tuberculosis of the Body of the Testicle. Irvin Abell.

Texas Medical News (Austin), October.

119 Splenectomy—Axial Rotation and Death of Spleen; Recovery. T. J. Bennett.
120 A Critical Study of Several Cases of Cholelithiasis. Albert Woldert.

Carolina Medical Journal (Charlotte), October.

121 *Tonsillitis from the Standpoint of the General Practitioner. A. L. Gray.
122 The Mosquito. Ennion G. Williams.
123 Some Observations on the Diagnosis and Treatment of Croupous Pneumonia. W. F. Mitchell.
124 A Case of Double Parotitis Complicating Suppurative Pyelitis and Chronic Colitis; Autopsy. W. C. Kluttz.

International Journal of Surgery (N. Y.), November.

125 Stones in the Kidneys. A. H. Cordier.
126 Notes on the Diagnosis and Treatment of Empyema. Charles C. Miller.
127 Regional Minor Surgery. (Continued.) George G. Van Shaick.
128 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
129 Practical Suggestions on the Treatment of Rectal Diseases. James P. Tuttle.
130 Multiple Osteoma. William L. Allen.
131 Intestinal Obstruction Complicating Pregnancy. W. P. Glendon.

St. Louis Courier of Medicine, October.

132 Municipal Control of the Dependent Classes. Alice M. Smith.
133 Report of a Case of Malignant Anthrax Edema. Ellsworth Smith, Jr., and H. G. Mudd.
134 *The Double-Knife in Histo-pathology. R. B. H. Gradwohl.
135 *Surgical Operations on the Aged. A. H. Meisenbach.
136 Vesico-vaginal Fistula; Operation According to Technique of Freund; Report of Case. Francis Reder.

Georgia Journal of Medicine and Surgery (Savannah), October.

137 Surgical Interest of the Subperitoneal Tissue. Hugh M. Taylor.
138 The Conservative Surgical Treatment of Appendicitis. W. E. Fitch.
139 The Early Operation for Appendicitis from a Pathological Standpoint. J. G. Carpenter.
140 Notes on Surgical Cases (Hemorrhoids, etc.). T. M. McIntosh.

New Orleans Medical and Surgical Journal, November.

141 The Relative Diagnostic Value of the Symptoms of Extra uterine Pregnancy. C. Jeff Miller.
142 *Malarial Hemoglobinuria. Otto Lerch.
143 The Ultimate or Predisposing Cause of Dermato-neuroses; An Hypothesis. J. N. Roussel.
144 Some Ideals for the Pharmacist. Isadore Dyer.
145 Thirty Cases of Acute Lobar Pneumonia with Twenty-nine Recoveries. E. D. Newell.

Medical Review of Reviews (N. Y.), October 25.

146 Hereditary Syphilis. (Concluded.) A. Jacobi.

Medical Standard (Chicago), November.

147 Appendicitis and Its Treatment. A. J. Ochsner.
148 The Commoner Diseases of the Eye: How to Detect and How to Treat Them. Casey A. Wood and Thomas A. Woodruff.
149 A Surgical Clinic (Epithelioma, etc.) Edward H. Lee.
150 Treatment of Pleural Fistulæ Following Operations for Empyema. Aime Paul Heineck.
151 The Circulation in the Nervous System. Herman Gasser.
152 Hydriatic Management of Pneumonia. David Paulson.
153 Complications of the Middle Ear. E. E. Clark.

AMERICAN.

1. **Apoplexy.**—Accepting under this head the symptoms commonly known as "stroke," Diller holds that its occurrence without the production of either paralysis or loss of consciousness is far more common than text-books would lead one to believe. The recognition of such conditions is of great importance. It often happens that only one of the two symptoms may be present, and he reports several cases that indicate this fact. One was apoplexy without either paralysis or loss of consciousness, one producing hemiplegia without loss of consciousness, one producing loss of consciousness and mental disturbance but no paralysis, etc.; also complicated cases and cases of loss of consciousness with hemiplegia due to other causes than apoplexy or without apparent cause. He remarks that it may be trite to say that apoplexy is only a symptom, not a disease in itself. Hemorrhage or thrombosis can occur only when blood vessels are diseased and embolism can only follow the entrance of a foreign body into the blood stream. The rise of blood pressure is the most frequent determining cause of apoplexy and in this we have our most significant hint of prophylactic treatment.

2. **The Etiology of Apoplexy.**—Walker remarks on one of the cases noted by Dillon and insists on the importance of auto-intoxication and the influence of heredity in producing vascular degeneration.

3. **The Klebs-Loeffler Bacillus.**—The summary and conclusions of Rupp's article are in substance as follows: 1. Clinically there are two kinds of diphtheria as regards the Klebs-Loeffler bacillus, those where the bacilli are present and those where they are absent. Both forms have the same clinical history and complications and sequelæ, von Behring to the contrary. 2. The character or quality of the Klebs-Loeffler bacillus in any case of diphtheria does not affect its prognosis. 3. Klebs-Loeffler bacillary diphtheria may be so mild as to simulate tonsillitis, and yet the most virulent bacilli be present. 4. The virulent bacilli may be present in the throats of healthy people, doing no harm either to themselves or others. 5. The Klebs-Loeffler bacilli are found associated with other bacilli in other diseases than diphtheria, but fail to exert any appreciable influence on these diseases. 6. Klebs-Loeffler bacilli vary much in size and shape from the regular and artificially determined type and the amount and quality of their toxicity is not bound in any special or definite way to fit any particular typical or atypical form, if the most recent bacteriologic utter-

ances on the subject be true. 7. The virulency of disease-promoting qualities of the Klebs-Loeffler bacillus can be determined only by experimental inoculation tests. The microscope can only differentiate their forms. Any opinion based on microscopic investigation alone is largely guess-work. 8. The ubiquity of the Klebs-Loeffler bacilli and their irregular and varying forms, besides the inconstancy of their toxic qualities in no way correlates with the clinical phenomena, making it impossible to grant them any primary specific etiological importance in the pathogenesis of clinical diphtherias. 9. The "necessary influences" and the "favoring conditions," besides other factors unknown to us, enfold within themselves the secret of the real causes—not cause only—of clinical diphtherias. 10. The assumed etiologic and pathologic supremacy of the Klebs-Loeffler bacillus is largely, if not altogether, a synthetic demonstration, and although this is not altogether "a bridge of fancies," enthusiastic laboratory workers and their unquestioning followers are traveling over it unhampered by the odious uncertainties and difficulties that have been presented in this paper.

5. **Nitrous Oxid and Ether Narcosis.**—Carter advocates the utility of nitrous oxid and ether narcosis as opposed to the use of ether and chloroform alone. He thinks the method especially valuable in neurotic patients and children and in valvular disease of the heart it can be used with almost perfect safety. Old people take it well, but special care should be exerted and its use avoided in all cases of arterial degeneration. In pulmonary diseases, provided the heart is not affected, he would advise the use of chloroform in preference to gas and ether, though mild cases do not contra-indicate the use of nitrous oxid. The only disadvantage of the method is that it requires somewhat complicated and expensive apparatus and expert skill to administer it, but its general adoption would necessarily lead to the systematic instruction in anesthetics, and would make expert anesthetists.

6. **Cutaneous Epitheliomata.**—The following are the conclusions of Allen's article: 1. Cutaneous cancer can be traced in almost all instances to preceding local irritation. 2. While other causes may be operative, it is not unreasonable to assume that infection may be one source of irritation occasioning cancer. 3. Benign epitheliomatous proliferations of infectious nature transmitted by contagion lend weight to this view. 4. Cancer is curable, but the disease may be allowed to progress until the patient no longer is. 5. No treatment short of the most radical measures should be tolerated. 6. In the application of caustic pastes and subsequent cauterizing dressings we possess a method not alone radical, but one which is in many conditions preferable to the knife. 7. The earlier treatment can be applied, the less likelihood is there of recurrence or of subsequent outbreaks in other parts due to cancerous tissue which has been left behind. 8. The *x*-ray as a means of treatment bids fair to prove quite as effective as caustic applications.

7.—See abstract in THE JOURNAL, xxxvi, p. 1652.

8. **The Lane Lectures.**—In this ninth lecture Morris reviews feigned eruptions, erythema of various types, keratodes, multiforme, herpetiforme, pemphigus, erythema nodosum, lupus erythematosus, rosacea, lichen, lichen neuroticus, skin neurosis and mental disturbance, zona, and eczema. He follows Head's opinion that zona, occurring idiopathically without obvious cause, is an acute specific disease of the nervous system analogous to anterior poliomyelitis. As regards eczema he does not support the parasitic theory, considering that it is not proven, though secondary infection is undoubted. In a large proportion of cases he thinks it is produced by disordered innervation of the skin and that the diminished resistance thus caused opens the way to invasion of the micro-organism.

9. **Muscular Atony in Uterine Displacements.**—The importance of this element in uterine displacements is insisted upon by Coe, who offers the following deductions for discussion: 1. Muscular atony is an important factor in the causation of uterine displacements, either alone or associated with the usual factors, overweight of the uterus and weakening of its ligaments and the pelvic floor. 2. Mere restoration of the organ to its normal position with regard to the axis of the pelvis is not sufficient to cause permanent relief of symptoms, provided additional support is not afforded by firm pelvic and abdominal muscles. 3. The prognosis as to the cure of malpositions by operations is influenced by the general muscular tone of the individual. 4. Hence it should be the aim of the physician to endeavor to restore such a healthy condition of the muscles, either before or after operation, by appropriate treatment—baths, massage, electricity, gymnastic movements, out-of-door exercise, tonics, and such regulation of the patient's dress and mode of life as seem best fitted to the individual case. In short, the work of the physician often begins where that of the surgeon ends, if the result is to be complete and permanent.

10. **Devitalized-Air Toxemia.**—Denison insists on the importance of the proper condition of the air, referring to Richardson's experiments as showing that oxygen may be deficient in quality, irrespective of quantity, and hypothetically explaining it by some atomic changes due to electrical disturbance. The toxin which he specially considers as having influence on the development of phthisis is due to stagnant unventilated air existing in the lungs themselves. The unrenewed pulmonary air is simply a tenfold intensification of devitalized air of the environment in which the consumptive lives. He criticises the too exclusive bacteriologic theory of consumption, claiming that it never has been and never will be shown that bacteria are the sole cause of diseases classed as tuberculous, for other causes are entitled to quite as much consideration. The nonconformity to healthful environment is the greatest scourge of the human race.

12. **The Philippines.**—The sanitary conditions in the Philippines are described by Chamberlain, who thinks that it is, for a tropical country, a healthy one. The water supply, however, is usually bad and should be looked after. Dysenteric troubles prevail. The sanitation of dwellings has been unduly neglected there by the natives in the past. Malaria is less prevalent than in Cuba, and he thinks that many cases so diagnosed are really a special fever, which may possibly be Malta fever. Venereal disease is not so prevalent or so serious as was expected. Tuberculosis, while not common, usually takes a bad course, and if the patients remain there, they are soon beyond hope. Skin diseases are very common. The natives live chiefly on rice, but this is simply a matter of necessity rather than of desire. He thinks the army ration does not need any extensive modifications. If any alteration is desirable it is the addition of sugar, which the soldiers seem to crave. The greatest needs there are permanent barracks, general vaccination, segregation of lepers, instruction as to sanitation and study of tropical diseases.

13. **Army System of Personal Identificatcn.**—The army system of personal identification is described by Alden, which seems to be a modified Bertillon plan, and its advantages are shown.

14. **Medicolegal Diplomas.**—The use of the medicolegal diploma and the selection of experts by special qualification, is advocated by Johnston, who describes the standard selected by the Faculty of the McGill University for giving this diploma and believe that when it becomes recognized as a qualification for expert work the advantage will be obvious.

17. **Trional Fatalities.**—Church has collected from the literature a number of cases of fatalities from the use of trional and sulphonal and adds a case of his own with autopsy. He gives special warning that abdominal distress and urinary derangements, including hematoporphyrinuria, indicate trional poisoning of a very grave character, and that the drug, even in so-called safe doses, may give rise to serious and even fatal toxic conditions.

18.—This article has appeared elsewhere. See abstract in THE JOURNAL of October 19, ¶85, p. 1066.

19. **Internal Lesions from Burns.**—From a series of 13 cases, McCrae has been led to the following conclusions: 1. The entire pathologic picture presents great similarity to the

conditions found in the diseases characterized by the presence of toxins of bacterial origin in the blood. 2. Damage to the lymphatic tissue is a constant feature, but is not necessarily focal, some cases presenting only diffuse degeneration. The cases which live but a few hours after infliction seem more likely to present a focal condition than those which live a longer time, as the condition which he interprets as proliferation and phagocytosis is one which may rapidly disappear. 3. The focal lesions are not a true necrosis, but rather a proliferation of the endothelial cells of the reticulum and the capillaries, and a phagocytosis by the leukocytes and endothelial cells, to which latter is due the fragmented, disintegrated appearance which suggests a true necrosis.

20. **Bacteriology of Otitis Media.**—This article deals only with the bacteriology of disease of the middle ear. Funke thinks that otitis media may occur in the absence of bacteria, or rather that the literature contains cases that seem to indicate this. The route of entry of infection may be through the blood, through the Eustachian tube, through the tympanic membrane as shown by Moos, through the petrosquamous fissure and by still other routes, but the most important is by the Eustachian passage. The bacteria found are the pneumococcus, streptococcus, and staphylococcus, Friedländer's bacillus, typhoid bacillus, bacillus diphtheriæ, tubercle bacillus, and bacillus pyocyaneus, as well as some miscellaneous forms which have been noted in isolated cases. He concludes with quite an extensive bibliography of the subject.

23. **Uterine Cancer.**—A review of the literature leads Noble to the following conclusions as to uterine lesions: 1. The majority of cases are too far advanced when first seen to hope for radical cure. 2. The percentage of cases of cancer of the cervix remaining free from recurrence at the end of five years under vaginal hysterectomy is variously given, but it may be claimed confidentially that at least 10 per cent. do so, and may be considered cured. 3. The results of hysterectomy, whether vaginal or abdominal, for carcinoma of the corpus are much more satisfactory. Statistics seem to show that about 75 per cent. of the cases are permanently cured, hence a good prognosis may be confidently given for abdominal operations. 4. The abdominal radical hysterectomy for uterine cancer involving the pelvic glands and the parametria along with the uterus is still upon trial. Its primary mortality is probably double that of vaginal hysterectomy and permanent conclusions as to the results are not yet possible. The most encouraging report of the operation is that of Wertheim, that after two and one-half years' experience he has had no recurrence. Noble's experience with cancer has not been satisfactory. He thinks his operative cases have been less than the average.

25. **Surgery of the Lungs.**—Eisendrath reviews the history and conditions of pulmonary surgery and offers the following conclusions: 1. Both acute and pulmonary abscess and gangrene following pneumonia may develop immediately, and chronic and simple putrid abscesses, with or without bronchiectases, are more remote sequelæ of both croupous and influenzal pneumonia, especially the latter. 2. The most valuable points in the history are the etiology; the sudden expectoration, after an apparent crisis, of pure non-odorous pus in the simple abscess cases, or of fetid pus in the gangrenous variety. In the chronic cases there is usually a history of a pneumonia having preceded the condition at some considerable time previously, followed by expectoration of large quantities of pus, with exacerbations of fever, accompanied by emaciation and frequently clubbed fingers, etc. 9. Signs of cavity are seldom present. The moist râles, especially of large metallic character, are the most reliable physical signs. The character of the sputum is also of great value, whether purulent or fetid. Elastic fibers are more frequently found in gangrene than in abscess, being comparatively rare in the latter. 4. The x-ray is only of confirmatory value, as it shows chiefly thickened areas of lung, and should not be absolutely relied upon. When it shows a shadow at the same point where the physical signs are present, it is of value. 5. The prognosis of abscess and gangrene following pneumonia, medically treated, is very favorable. One of the greatest difficulties is the exact localization of the focus. His statistics show a marked increase in the percentage of recoveries within the last five years. The prognosis of chronic cases is not so favorable. The walls of the cavity are often rigid and free communication of a bronchus with these cavities is also a great hindrance. The statistics are improving.

26. **Pneumonia.**—Hall's analysis of 70 cases is quite thorough and certain special points are noted. He does not think the increasing mortality of pneumonia means that it has become more malignant. The decreasing death rate from tuberculosis, diphtheria, typhoid and other diseases leaves more people to grow old. Pneumonia is a disease of advancing age. He thinks it entirely probable that its mortality will continue to increase, for it will be a final infection of those escaping death from other causes. Of the remedial measures he has seen benefit from judicious bleeding and great relief from ice-packs in pyrexia. Insomnia requires opiates rather than depressing hypnotics and the free use of strychnia in recent years is a great gain. Cardiac depressants are not advised by him. Liquor ammonii acetatis or sweet spirits of nitre seem to be equally good. Digitalis has been given frequently in cases of heart weakness, and alcohol where needed. He thinks the use of oxygen has been of value in some cases. His opinion as to serum therapy is not too favorable.

27. **Hospital Abuses.**—The special abuses noticed by Hillis are the promiscuous mixing of paupers, pay patients and criminals in hospital wards and the lack of distinction between pay and non-pay patients generally which favors imposition, the propriety of charity patients paying for their treatment by being used for medical instruction, the need of better training of internes in the preparation for hospital service and the payment of the hospital staff. No class of men should be obliged to work for nothing for the community when others do not.

28. **Influenza.**—Anders has analyzed the climatic conditions of influenzal epidemics and finds that the disorder seems to depend more or less on extremes of cloudiness during the season. La grippe seems to like darkness better than light, but he says it is not inferable from his observations that there is the positive and direct relation between the absence of sunshine and the prevalence of la grippe that Ruhemann would have us believe.

32. **Typhoid Fever.**—Taylor pleads for treating typhoid by assisting Nature, favoring assimulation, minimizing waste, deflecting the patient's mind from his business, reorganizing the organism and allowing each organ to do its work to its best advantage. He says the best rule is "if you don't know just what to give don't give anything." There is already inflammation of the bowels, and it is unsurgical to use purgatives like calomel. If nausea exist, give the stomach rest until it can digest food; feed three times a day and give just such food as can be perfectly digested, beef tea and beefsteak pulp moderately heated, powdered crackers, raw eggs. Never allow the patient to eat anything that requires mastication, but always have food prepared so that it needs only to be mixed with saliva. The milk diet he condemns, as also the use of alcoholics. Avoid disturbing the patient during sleep. Allow the patient to drink all the water that is desired. Keep the mouth clean. For restlessness, bromids are effective and leave no bad result. If there is much decomposition in the intestine, he uses saline cathartics and then tincture of iodin and carbolic acid in small doses until they are contra-indicated. Colon irrigation is employed three times a day with warm water. If there is catarrh a little extract of pine and Dr. Mathews' prescription of almond oil, bismuth and iodoform, at night. Two typical causes are reported, and he says in the treatment remember the stomach first, the colon next.

33. **Urinary Toxicity in Pregnancy.**—Stewart details experiments which he has made to determine the toxicity of urine during pregnancy, and while the general result is somewhat undetermined, he leaves the impression that while it has been heretofore attributed to poisons generated in the

human body, it is more often due to micro-organisms. In his own experience, 75 per cent. of deaths could not be attributed to any other cause than bacteria due to infection of urine during catheterization or subsequent manipulation.

35. **Dermoid Cyst of Testicle.**—Morris reports a case of true dermoid of the testicle, containing hair and two teeth. The condition seemed to be congenital as it was probably noted the second day after birth.

36. **Gunshot Wounds of the Pregnant Uterus.**—Gellhorn continues the report of cases from the literature and gives an analysis of the symptoms. From his observation he thinks that in every case of gunshot wound of the pregnant uterus, Cesarean section should be performed at once. The Porro operation is preferable on account of possible infection.

37.—This article has appeared elsewhere. See THE JOURNAL of September 28, p. 869.

38.—Ibid.

39.—Ibid.

40. **Essential of Toxemic Dropsy.**—The disease described by Herringham is a condition in which there is dropsy in the legs, sometimes in the arms and face, exactly resembling renal dropsy, but with no albumin in the urine and no constant lesions. The disease closely resembles nephritis in its causation by cold and scarlatina, but can not be explained by the ordinary theories. He is inclined to think that it is due to some toxic poisoning, such, for instance, as that of scarlatina, which may in some cases produce anasarca without inflammatory disease of the kidney and in other cases produce both anasarca and kidney disease. The treatment that has been employed in these cases has been wet packs, hot-water baths, hot-air baths, and iron for the anemia. He suggests the use of syrup of iodid of iron and arsenic, and also endeavors to stimulate the kidneys by milk and digitalis.

41. **Tendon Grafting.**—White refers to the unequal results obtained in tendon grafting, but reports a case showing the advantages. He thinks that the method is a valuable addition to our means of treating a class of cases which, previous to its adoption, were alike objects of pity and reproach to the medical art.

50.—See abstract in THE JOURNAL of October 5, p. 932.

51. **Feigned Impairment of Vision.**—The simple test here used by Snydacker is based on the common belief of ignorant people that they can look at an object with both eyes open and use only one eye. The physical defect here claimed was in the right eye. The left was normal in its visual field, while the right was somewhat contracted. The patient was seated at the perimeter, his right eye gazing at the test object, his left behind the screen, and while thus using only his right eye, the screen was quietly removed from the left and he still claimed to see the same contracted field which the observation of the right eye had previously disclosed. Malingering was, therefore, revealed.

52. **Prostatic Hypertrophy.**—Schmidt describes the various forms of prostatic obstruction, the collar-shaped, hypertrophic enlargement of individual lobes, pedunculated lobes and the formation of large tumors growing into the cavity of the bladder. The methods of diagnosis are given.

54. **Inflammatory Affections of the Nails.**—The various conditions that may affect the nails are noticed by Pollitzer, who believes that the majority of onychias are principally due to staphylococcus aureus. Onychia maligna is a special form rarely seen, which is at least due to bacillus tuberculosis in some cases, while Jonathan Hutchinson holds that it is generally due to syphilis. The most common of all the acute inflammatory conditions is the ingrowing toe-nail. It is due, as a rule, to ill-fitting shoes. The age period of its occurrence, between 15 and 20, and the common association of hallux valgus support this view. Before leaving idiopathic diseases he mentions confectioners' onychia, which is due to the practice of putting their fingers into hot syrup fruits. Next he notices diseases in which the nail inflammation forms a part of an inflammatory dermatosis; among them hyperkeratosis subungualis, a rare condition regarded by von Hebra as localized eczema. Eczema of the nails is a protean condition; variability is its special characteristic. Psoriasis may also affect the nails and occurs in two forms, early and late. The early form consists in the development of minute hyperemic spots seen in the proximal portion of the lunula underneath the cuticle, followed by punctate softening and desquamation and the nails finally come to have an appearance of a thimble. In the severer forms of psoriasis the nail-plate is raised up by a dry crumbly mass of scales and a special feature is the occurrence of a sharply marked transverse depression which extends as a "punched-out" groove several millimeters broad across the nail. Above and below this groove the nail-plate may appear comparatively normal. Changes in the nails may occur in pityriasis or pemphigus. Syphilitic affections are very important; chancre of the terminal phalanx is not infrequent. As manifestations of a general syphilitic infection, two groups of nail affections may be described, those which are dry and those which are moist. The first form has occurred as early as eight months after the infection; but most cases occur from two to ten years later. While essentially chronic, it generally yields to anti-luetic treatment. Of the moist forms of nail-syphilis, paronychia ulcerosa syphilitica is the most common, generally occurring during the greatest activity of the general infection. The nail-plates may fall off and their place be filled by ulcerations. The condition is more rarely seen now-a-days owing to the general recognition of syphilis and the improvement in its treatment.

55. **Trophic Affections of the Nails.**—Zeisler describes in this article the transverse furrows or grooves which follow fevers and are due to temporary disturbance or arrest of their growth in the matrix and a somewhat rarer central excavation or depression of the plate due probably to processes of shrinking in the nail bed and described as koilonychia. Alopecia ungualis consists in the total falling off of one or more nails without notable cause and without pain or inflammation: this, he thinks, is due to some unexplained trophic disorder. It has been known to follow severe shock or on exposure to the Roentgen rays. Nail atrophy is another condition first observed in connection with other diseases, and sometimes with disturbed nutrition and peripheral nerve lesions. One form in which it shows itself is brittleness, another is a tendency to longitudinal splitting. He also mentions the leuconychia or white spots under the nails, which may be due to slight traumatism, but these often can not be traced. The chief hypertrophic condition of the nails is a transformation into claw-like appendages. He mentions a case seen by him in which he attributed this to a deep-seated trophic disturbance. In conclusion he mentions the connection with general diseases, frequent inflammation of the nails after nerve lesions and in Raynaud's disease or in syringomyelia.

56. **Parasitic Diseases of the Nails.**—These are chiefly limited to onychomycosis, the animal parasitic affections requiring barely more than mention. The symptoms are described, also the varieties of favus, trichophytosis, and their etiology. Auto-infection seems to be the principal cause in these cases. The various points of diagnosis are pointed out.

57. **Treatment of Nail Disease.**—Hardaway insists on the importance of antisepsis and limitation of the care of the nails to the free borders. In eczema and psoriasis, arsenic internally is advisable and lactophosphate of lime and sulphur are also of considerable value. Th local treatment consists mainly in the use of the preparations of tar, salicylic acid and chrysarobin combinations. We should pay attention to paronychial conditions in onychia and eczema. Syphilis of the nails, of course, is managed by specific treatment. Onychomycosis is rare; after the proper scraping and paring, the usual parasiticides may be employed. Several prescriptions are given. In ordinary onychia, division or evulsion of the nail is generally demanded and gives relief to pain and tension. In most instances strict cleanliness and the use of some antiseptic lotion is all that is necessary in the way of after-treatment. Where there is a suspicion of tubercular granulations, Shield

insists upon the free use of the curette followed by the application of pure carbolic acid. In onychia maligna, as seen in strumous children, tonics and nutritious food should be made an essential part of the treatment. For hypertrophies and atrophies no precise rule can be laid down. Surgical procedures are occasionally demanded. Ingrowing toe-nail is mainly surgical in its treatment, but often relief may be had by inserting lint or tinfoil under the niche of the nail in mild cases.

58. **Internal Urethrotomy.**—Lydston suggests as a possible cause for failure, that more importance should be attributed to idiosyncrasies in these cases. The possible constitutional tendency to fibrous hypertrophic tissue growth should be taken as one of the best explanations.

71. **Epidemic of Noma.**—Blumer and MacFarlane report the facts of an epidemic of noma that occurred at the Albany Orphan Asylum, sixteen cases altogether, and discuss them in the light of the literature. As a result they conclude that noma, while originating in all probability as a simple infection, is always in its later stages a mixed one. While it is probably not always due to the same organism, it is more frequently caused by long thread-like organisms of the leptothrix type that do not grow on ordinary culture media. Krahn's assumption that it is due to mouth organisms is negatived by finding similar organisms in the noma of the genitalia.

72. **Raynaud's Disease.**—Beck reports two cases and illustrates them with skiagraphs showing that the tissue changes in Raynaud's disease are not confined to the soft tissues, but also affect the bones. In the cases reported there was an atrophy of the upper ends of the third phalanges of the hand, and osseous proliferation of the upper end of all the second phalanges.

73.—See abstract in THE JOURNAL, xxxvi, p. 1339.

74. **Osteitis Deformans.**—A case is very fully reported by the authors and the literature of the condition discussed. From a clinical standpoint he concludes that: 1. Sixty-six true cases are found in the literature besides the one here reported. 2. Osteitis deformans is a distinct disease of obscure etiology possibly allied to, though not identical with osteomalacia, fragilitas ossium and acromegaly. 3. The disease is especially one of adult life, though it has been observed as early as 21 years. The largest percentage occurs in males; in a small proportion traumatism seems to play a part in the causation. There is little evidence of any family tendency to the disease, though there are a few examples in the literature. 4. There is a striking general resemblance in the subjects in their general characteristics, the most noteworthy features of which are enlargement and forward projection of the head, dorsal cervical kyphosis, prominence of the clavicles, spreading of the base of the thorax, diamond-shaped abdomen, crossed by a deep sulcus, the relative increase in the width of the hips, and the outward and forward bowing of the legs. 5. The bones most frequently affected are those of the clavicle, tibia and femur. There is a curious preponderance of cases involving chiefly those of the left side, though in some cases it has been crossed, the lower extremities on one side, and the upper on the other being most affected. 6. The association with malignant disease, while present in the case reported, does not seem to be so frequent as usually stated. From a pathologic standpoint the following conclusions are offered: 1. Osteitis deformans is a disease affecting the skull, vertebræ and certain of the long bones. Its essential characteristics are: (*a*) Absorption of compact substance, causing enlargement and confluence of the Haversian canals. (*b*) Formation of new bone which runs diffusely through the affected and the adjacent healthy portions, and which remains uncalcified and is in turn reabsorbed. (*c*) Conversion of the medullary substance into a vascular connective tissue containing fat cells, giant cells and leucocytes. In a small proportion of reported cases the cysts fill with gelatinous matter and giant-celled sarcomas occur in the medulla. (*d*) As a consequence of these processes the original relations of compact substance in the medulla are destroyed, the bones become thickened and asymmetrical, but since the new bone tissue remains uncalcified its elasticity permits of great deformity of the long bones from the weight of the body, and fractures do not occur. 2. The whole picture of osteitis deformans from its pathologic aspect is so characteristic that it must be considered a distinct disease of easy pathologic diagnosis. 3. The etiology of this is as obscure as when first described. Some predisposing tendency, probably trophic, must be assumed and the exciting cause must be mechanical; in the skull, extremes of heat and cold, and in the vertebræ and long bones the ordinary traumata to which these bones are exposed. Lesions of the nervous system are inconstant and rare and probably not a causal factor.

75. **Asymmetry of the Nasal Cavities.**—The following propositions are offered by Coolidge as giving the main points of interest in regard to this condition: "1. In cases of deviation of the septum, the common asymmetries of the other intranasal structures should be classed as physiological compensatory changes. 2. As a rule, these changes in the turbinated bodies and ethmoid bone are not due to increase or diminution of the air current. Neither is the deflection of the septum often secondary to asymmetrical turbinates. 3. Whatever may be the mechanism which underlies this adjustment, the ethmoid and the turbinated bones are especially endowed with nutritive adaptability, and in consequence are able to minimize the disturbance which a deflecting septum would produce. Slight deflections are often rendered entirely innocuous, more extensive ones partially so. 4. The entrance into the nasal cavities proper can not share in this readjustment, and here a deflection of the cartilage of the septum soon becomes obstructive."

77. **Typhoid Cholecystitis.**—Pratt reports cases of cholecystitis and cholelithiasis associated with the presence of typhoid bacilli in the gall-bladder, and points out the probabilities of the agency of this germ in the production of cholelithiasis.

79. **Infantile Bone Lesions.**—Two cases are reported by Taylor showing the difficulties in the diagnosis of bone lesions of children. In the first there was a diagnosis of scurvy with a suspicion of tuberculous osteomyelitis, the second one had the symptoms and picture of Pott's disease; on the abscess being evacuated it showed the staphylococcus aureus. He suggests making the blood examination a part of the routine record as well as that of the urine.

81. **Tuberculosis of the Cervix.**—Beyea reports a case of tubercular infection of the portio vaginalis and cervix uteri and discusses the condition from the literature. He has been able to collect 69 cases including his own, which he analyzes. He points out the peculiarities. The treatment should be operative, as a rule, excepting where there is extensive disseminated tuberculosis.

82. **Ophthalmoplegia.**—Adt points out the difficulties of certain theories of locating lesions affecting the ocular muscles, more particularly those involving the nucleus of the third nerve and those involving the root fibers of this nerve in the tegmentum. He concludes that our knowledge of decussation of the root fibers of the ocular motor thus far derived from clinical and anatomical study is of diagnostic value only in consequence of the fact that it increases the tendency to binocular paralysis in nuclear lesions, but that this decussation causes characteristic combinations has not as yet been demonstrated. He points out that if the anatomy of the nucleus as described by Kolliker and Bach is accepted, a monocular nuclear palsy involving all the branches of the third nerve would be impossible. Lesions on the one side would necessarily implicate those intermingling fibers which have crossed over from the opposite side and he maintains that it has never been anatomically demonstrated that the nuclear lesion can involve all or even the majority of the muscles of one eye governed by the third nerve without affecting the muscles of the other eye. The diagnosis of monocular palsy must be made with reserve in all cases of even partial monocular ophthalmoplegia. He quotes the case reported by Starr of partial

external ophthalmoplegia of both eyes due to embolus in the tegmentum, and criticises the conclusions that, if one or two of the muscles of the eyeball supplied by the third nerve are affected, others escaping, the lesion lies in the tegmentum of the crus cerebri between the nuclei of origin and the point of exit of the third nerve; one or both eyes may be affected, but both eyes are rarely affected in the same way. Making exceptions only in cases of post-diphtheric ocular paralysis, Adt would say that in a case of monocular ophthalmoplegia with sudden onset affecting any of the muscles which move the eyeball supplied by this third nerve, others escaping, the lesion lies in the tegmentum of the crus cerebri and that in case of binocular paralysis of this form with sudden onset the lesion lies in the nucleus of the third nerve in the floor of the aqueduct of Sylvius. These rules are also applicable to a great extent in cases with chronic onset, though lesions of the base of the brain or in the orbit implicating some of the fibers of the third nerve may in rare instances cause similar forms of paralysis.

85.—See abstract in THE JOURNAL, xxxvi, p. 1491.

86. **The Blood Count at High Altitudes.**—The experiments of Campbell and Hoagland lead to the following conclusions as to the rapid increase of the blood count as we ascend: "1. The blood count increases as we ascend (without exertion) at the rate of 50,000 corpuscles per cubic centimeter of blood per thousand feet. 2. The pulse rate increases in the same ratio as the blood count, rising as the pulse rises, and in like proportion falling when the pulse rate falls, showing that the heart seeks to overcome the changes brought about by the lessened barometric pressure. 3. The increase is not a true multiplication of the blood corpuscles, but is due to a changed vasomotor condition in the peripheral vessels incident to diminished barometric pressure. This condition of vasomotor control of circulation and blood count was demonstrated in the various experiments made, where it is shown that the count can be increased or diminished by any means that will dilate or contract the peripheral capillaries. 4. This is further demonstrated by the experiments on rabbits, which showed the same increase as man, and by the mesenteric count demonstrated that the external capillary count was increased at the expense of the internal abdominal circulation. 5. The increase in the blood count disappears and the heart's action returns to the normal when we return to the altitude from whence we started. This is another confirmation of the fact that the increase is a fictitious one, and is due to a diversion of the blood current incident to diminished barometric pressure. 6. The dilatation of the external capillaries (skin and lungs) would not alone account for all the increase, but with this dilatation we have another effect of diminished barometric pressure, viz., diminished arterial tension. With vessels of an increased caliber and a heart with a diminished force we can plainly see that we will have more or less of a temporary stasis in the dilated capillaries. In the course of time Nature seeks to adjust an equilibrium in the economy of those who live at high altitudes. The heart becomes more forcible by the strengthening of its muscles, and the circulation becomes more equitable. Hence the gradual decline in the blood count (Solly) of those who have remained for some time at a high altitude. 7. The want of increase of hemoglobin in proportion to the increase of blood count in ascents is accounted for by the fact that the blood corpuscles, the carriers of the hemoglobin, are not increased at once in high altitudes. After remaining some time at a high altitude the true increase in blood corpuscles takes place, and with it the increase of hemoglobin."

87. **Contusions of the Abdomen.**—Stewart's article is a review of the reported facts in regard to contusions of the abdominal viscera.

93.—See abstract in THE JOURNAL of September 14, p. 713.

111. **Mental Weakness of Women.**—This translation from the German of Professor Mobius maintains that woman is inferior in her brain development, especially in those parts associated with mentality and that this condition exists from birth. Woman is instinctive, animal-like, dependent on this depends her attractiveness. If woman were not physically and mentally weaker than man with her emotional tendencies, she would be extremely dangerous. Her lack of creative ability is manifest. Her learning powers are quickly lost. While we consider woman mentally weaker than man, nothing to her detriment is thus implied. Her accomplishments differ from those of man. This differentiation seems to be a wise provision of Nature. She learns quicker than man, but loses the faculty earlier. The mental crippling effects of marriage are remarked upon and especially the changes of old age.

121. **Tonsillitis.**—The two chief types of tonsillitis, follicular and parenchymatous, are described by Gray, who points out the difficulties of differential diagnosis from diphtheria and at times the absolute necessity of the bacteriologic test. He believes we will find eventually that tonsillitis is due to specific bacteria, and that we are in error if we allow the cases to be closely associated for any length of time with other individuals.

134. **The Double-Knife in Histo-Pathology.**—Gradwohl calls attention to the value of the double-knife in making pathologic examinations and sums up the reasons why we should use this method of examination. 1. Where there has been a hemorrhage into the tissue, we can see it best in the fresh specimen, getting a better idea of the age of the hemorrhage. Hematoidin crystals can be made out, also amorphous yellow hemosiderin. 2. Necrotic changes can as well be investigated in the fresh specimen. 3. Atrophy is easily made out. Should we want to examine the muscles and nerves in atrophy the use of maceration fluids are necessary. 4. Cloudy swelling and parenchymatous degeneration can be seen only in the fresh specimen. To differentiate this condition from fatty changes use acetic acid which dissolves the intercellular nuclei. 5. Fat changes can be seen by the use of acetic acid, ether and chloroform and osmic acid staining. 6. Hyalin and colloid degeneration can be well studied in this way. 7. The microchemistry of amyloid degeneration can be best solved in the fresh specimen. 8. Inflammation of tissue in general can well be studied in the unstained fresh specimen, but if staining is desired, dip the specimen in methyl green. 9. Tumors of various sorts, if of good consistence, can be diagnosed in this way. The technic of the use of the double-knife consists in arranging the blades at a suitable distance, dipping the knife into water so as to secure a film of water between and over them, holding the knife perpendicularly to the surface to be cut, bringing it firmly down upon the organ, imitating the bow-string movement of the violinist, and swerving the instrument from side to side so as to release the specimen; again dip the blades in water and the specimen floats out and it can then be mounted.

135. **Surgical Operations on the Aged.**—Meisenbach finds that the aged bear capital operations very well and that age *per se* is no contra-indication to operation, other things being equal. The aged, under proper conditions, should be given the benefit of our skill in surgical work, but we must bear in mind that the aged do not bear well the loss of heat and blood.

142. **Malarial Hemoglobinuria.**—Lerch gives certain facts of his experience as regards malarial hematuria in a swampy wooded region in Louisiana. There seems to have been a predisposition, and men were almost exclusively attacked by this special symptom. He says that having here proper conditions, viz., a particular parasite, climate favoring the condition, individuals that have suffered from repeated malarial attacks with serious damage, blood saturated with toxins, faulty metabolism, and the idiosynerasy above mentioned we can readily understand that then, and then only, the phenomena of hemoglobinuria may be provoked by a number of direct causes that under other conditions would appear to be trivial. Quinin hemoglobinuria is also briefly mentioned. The parasite in the patient is the primary cause; quinin acts only as the provoking agent. He believes that quinin is a specific, but it must be understood that it has no curative influence on hemoglobinuria. All it does is to destroy the parasite and it does this thoroughly. Its continuous administration is injurious. Those

that do not yield with a few doses are not due to the parasite, but are post-malarial. Rest is of utmost importance; fresh air, oxygen treatment is justified; proper elimination, bathing, treatment of anemia, etc., and proper diet are all noticed.

FOREIGN.

British Medical Journal, November 2.

Local Treatment in Diseases of the Upper Air-Passages. SIR FELIX SEMON.—The author commences the lecture with remarks on the tendency to overdo surgical treatment, and says that the local treatment of ailments of the upper air-passages is not an exception to the rule and has of late years been considerably overdone. The question as to who are the greatest sinners, the profession or the public that permits this sort of treatment, is noticed; he does not think it fair to lay it altogether on the patients, though they are apt to rush into the "non-repellant arms of surgery." Every specialist has some pet operation of his own to which he resorts, and the personal element enters largely into all questions of treatment both as regards the patient and the medical advisers. Our views as to the general principles of treatment of the air-passages are apt to be changed by every new discovery. For the purpose of the lecture he divides the pathologic conditions into the following categories: 1, affections of purely local character; 2, local manifestations of general disorders; 3, local manifestations of the nose and throat dependent on local disease in correlated areas; 4, affections of the upper air-passages supposed to exercise an influence upon other organs and parts of the body, either direct or reflex; 5, local symptoms of sensations of obscure origin. All these overlap each other to a certain extent. In the conclusion of his course he proposes to make some observations on the necessity of a proper proportion being observed between the gravity of the disease and that of the interference. This first lecture deals with the purely local affections of the air-passages and he enumerates the conditions where interference is essential, such as the removal of papilloma, fibroma, complete nasal obstruction, chronic frontal sinus empyema, removal of foreign bodies, etc., and malignant disease of the larynx. We should shake off the belief in the incurability of cancer and not hesitate to operate when it exists while the mischief is still purely local. He thinks, however, that interference with every little deviation, such as nasal spurs, little suppurations in the middle meatus, or every little bunch of adenoid tissue in the vault of the pharynx is not demanded. It is a bad practice for physicians, more and more the fashion, to frighten, perhaps unintentionally, by reciting all the possible contingencies that might arise if the operation was not performed. There should be no hurrying patients into the operation, unless there is good reason for it. He takes up the question of adenoids, pointing out the surgical enthusiasm and the reaction which has taken place to some extent with respect to operation for this disease. As regards the breathing exercise treatment he has an utter lack of confidence in it as a curative method in this condition. As regards operation he divides adenoids into three classes: 1. As to whether they cause (*a*) permanent, (*b*) periodical or transitory, or (*c*) no symptoms. In the first class where respiratory obstruction, open mouth, snoring, thick voice, deafness, and the peculiar deformation of the face and chest and general debilitated state of health exist, he considers operation absolutely indicated. In the second class in which are free intervals and alternate periods of obstruction and impairment of hearing, or attacks of earache, the question is more difficult. If the patient is brought to you at his worst with the definite statement that the attacks only occasionally occur and last a short time and you find some soft swelling of the lymphoid tissue, but no deafness or organic ear disease, it would be better to postpone the operation until the symptoms are more decided. If you are in doubt as regards it, lay a clear and non-alarming statement before the parents and let them decide themselves. When adenoids give no symptoms he thinks they should be let alone. There is often not an inconsiderable amount of lymphoid tissue in the vault of the pharynx that has never done any harm. As regards reflex neuroses he is a skeptic, especially those due to adenoids. As regards operation he says the thing is to avoid recurrences, and thorough operation is the best assurance of this. He describes his own method of having the child in the recumbent position with the head well over the table so that there is no danger of blood or loose pieces of adenoid getting into the larynx. The operation should not be finished until the operator by thorough digital observation has convinced himself that there is not a vestige of lymphoid tissue protruding over the surface of the mucous membrane left behind. In conclusion he says, in all purely local affections of the upper air-passages there are certain cases in which all reasonable men will agree that local treatment is required, and others that the moderate section at any rate will be unanimous that it is not. Between these two large classes there is the very large intermediate one in which everything is the question of degree and in which opinions may legitimately differ as regards the local treatment. If we err at all at the present time the tendency is to err by doing too much operating. He quotes Talleyrand's celebrated counsel to a young diplomatist: "Above all, not too much zeal!"

The Dublin Journal of Medical Science, October.

The Blood Corpuscles in Enteric Fever. W. A. WINTER.—As there seems to be some obscurity in regard to the leucocytic condition of the blood in enteric fever, Winter has investigated the subject, comparing the relative frequency of white and red corpuscles, also the lymphocytes, large mononuclear leucocytes, polymorphonuclear leucocytes, and eosinophile cells, using Simon's method in estimating the number of leucocytes. At the time of starting this investigation he was not aware of the work of Thayer on the subject or he would have modified his methods to some extent. He gives a comparative table showing the averages of each week compared with Professor Thayer's results. His conclusions are summed up in the following: "1. The number of red blood corpuscles gradually diminishes as the fever progresses, but with the establishment of convalescence regeneration sets in. 2. The number of leucocytes is diminished throughout the course of the fever. This rule does not hold good in all cases, but is so constant that if, in a given case of a non-eruptive fever, the number of leucocytes is normal or subnormal, it would be a strong point in favor of the diagnosis of enteric fever. 3. There is a progressive diminution in the percentage of the polymorphonuclear cells which continues into the stage of early convalescence. 4. The percentage of the large mononuclear leucocytes is increased through the whole course of the fever, and continues into the stage of early convalescence. 5. The percentage of lymphocytes is increased throughout the fever, the increase being most marked in the stage of convalescence. 6. While the fever lasts the percentage of eosinophile cells is subnormal, but with the establishment of convalescence it again reaches and may even pass the normal level." His results in the main agree with those of Ehrlich and Thayer, but disagree with those of Courment and Barbaroux, whose opinion that hypoleucocytosis is due to a decrease in the lymphocytes with possible increase in the polynuclear leucocytes; that this decrease in the percentage of lymphocytes is seen in the stage of convalescence is directly opposed to Winter's experience.

Medical Press and Circular, October 23.

The Asphyxial Factor in Nitrous Oxid Anesthesia. T. PERCY C. KIRKPATRICK.—The author points out the possible dangers of asphyxia in nitrous oxid anesthesia. Fortunately, the extreme conditions are not commonly met with, but there are objectionable ones that should be avoided. In the first place is the jactitation so commonly met with in gas anesthesia which is really the chronic convulsions of the second stage of asphyxia and may easily be avoided by giving the patient more air. Another phenomenon even more annoying is the struggling which he thinks is also due to the want of oxygen. In many cases the only evidence of asphyxia which may be present is the increased frequency and depth of respiration. It is important to recognize this as an indication of what will follow if it is neglected and because over-stimulation of the respiratory center is apt to be followed by a period of apnea, which may cause trouble. Ordinarily the condition is devoid

of danger, but with weak heart or degenerated vessels it might be serious, and it is almost always followed by violent headache after recovery. The swollen state of the tongue sometimes impedes manipulations about the teeth in gas asphyxia, and is due to the asphyxiated stagnation of the blood. This also favors hemorrhages of the sockets of extracted teeth, thus annoying the operator and when time can only be counted in seconds this is a matter of some importance. These remarks apply with as much force to the administration of ether as that of gas, and in the administration of chloroform any asphyxia is a serious risk. The point to be observed is to give the patient enough air to supply the oxygen while we administer gas enough to anesthetize the patient; hence, the value of the combined oxygen and nitrous oxid method. While the circulation is maintained, and the air way clear, one or two respirations will lessen the cyanosis and indicate the onset of recovery. But if these do not occur he will conclude that either the air is not entering the lungs or that the heart is not acting properly. If the pulse continues to beat he concludes that there is obstruction to the air entering the lungs. Here a method of artificial respiration is indicated; possibly tracheotomy is necessary, but if the circulation is at fault it is worse than useless. If the condition of aspnyxia has arisen early during the administration after struggling and is attended with deep cyanosis the case is probably one of overdistension of the heart; while if it occurs later in the administration and comes on suddenly without warning it is most likely due to syncope. In the latter case inversion of the patient is advisable, but with over-distension of the heart this would only make matters worse. In over-distension we should try to modify the heart by intermittent pressure over the precordial area, and possibly also open one of the jugular veins, artificial respiration being kept up continuously in each case.

Age and Sex as Etiologic Factors in Differential Diagnosis of Gastric Ulcer and Carcinoma. WILLIAM MURRELL.—From statistics offered by Welch, Fenwick, Martin, Murrell and others, the author concludes that gastric ulcer is from two to three times as common in women as it is in men, and most of the cases occur in the decade from 20 to 30. On the other hand gastric cancer is a little more common in men, and the majority of cases occur over the age of 50.

The Lancet, November 2.

Human and Bovine Tuberculosis. EDGAR M. CROOKSHANK.—Crookshank expresses himself in full agreement with Koch that if infection occurs at all from the milk and meat of tuberculous cattle, it is of very rare occurrence, but he entirely disagrees with Koch in his statement that human tuberculosis can not be inoculated into cattle. He recalls certain experiments of his own and those of Ravenel and others, and while he notices the contradictory results obtained by Koch, he thinks the facts quite in harmony with the view that human and bovine tuberculosis are distinct varieties of the same disease. Man is not the natural soil of bovine tuberculosis and similarly the cattle are not the natural soil for human tuberculosis. The difference in soil is well shown by the facts in regard to smallpox, from which cattle do not naturally suffer, but in exceptional cases the disease can be grafted upon them and the result is a mild infection; smallpox of man is transformed into a locally-inocular, mild, vesicular malady in cattle and can never again acquire an infectious character. Sheep-pox is another instance where a highly infectious malady when successfully grafted on the human subject becomes a mild non-infectious disorder. All tubercle bacilli can be inhaled and taken in with the food by perfectly healthy individuals without producing tuberculosis. There are instances of direct inoculation of man by bovine tuberculosis. Cooks and butchers may suffer from tubercular nodules, but they undergo caseation and disappear. Human infection can only be exceptional; if it were not so, man would be decimated by the disease. Crookshank does not accept the theory that abdominal tuberculosis in children is due to tuberculous milk. There are plenty of chances for auto-infection of the intestines, and many ways in which the child can be infected by human bacilli through the mouth. Physicians of experience are not so ready to attribute consumption in any form to tuberculous meat or milk, and he quotes Drs. R. Douglas Powell and J. F. Goodhart in evidence of this. The vegetarian races suffer badly from tuberculosis and he thinks if children suffer from it the trouble is rather that they do not get enough milk; their nutrition is insufficient. He calls attention also to the importance of heredity and believes in the direct transmission of it to a greater extent than is generally admitted. The direct contagion of consumptives has also been much exaggerated; at the same time the habit of spitting in public places, in railway carriages and so on, should be prohibited and the sputa of phthisical patients should be disinfected. That the virus of tubercle scattered far and wide becomes a constant source of danger to all who inhale the air is not a theory which is supported by his experience. We must not draw hasty conclusions from experiments on small animals like guinea-pigs. If tuberculosis were readily conveyed from person to person the marriage of individuals who become or are consumptive would be a fruitful source of direct infection; it is not so according to experience. There is a great difference between inoculation and natural infection.

Milk or Whey in Enteric Fever? PRIDEAUX SELBY.—Milk should not be given as a diet to enteric fever patients according to Selby, because it in many cases forms a hard cheesy curd in the stomach. The bacillus typhosus breeds rapidly in milk and toxins are produced. If we can not give milk what can we give? From a suggestion by someone whose name he has forgotten, he was led to employ whey. The result has been to reduce the death rate of his patients from 15.5 to 2.7 per cent. in 73 cases. The whey contains about one-half as much solids as the milk does. It consists of a solution of milk-sugar, with small amounts of fat, albumin and salt, and he gives figures showing how 4 pints of whey may be a sufficient diet for an adult typhoid fever patient. The method of preparation is to stir two teaspoonfuls of rennet into one quart of milk, warming slowly until it curdles. Break up the curd and strain through a fine linen. It can be sterilized in summer and made more palatable by the addition of tea or coffee or other flavoring. The quantity given varied from 1.5 pints to 6 daily. If it is sterilized some lemon juice should be given occasionally to prevent scorbutic symptoms. The amount of emaciation on this diet varies very much, but not more than it does on any of the usual diets for typhoid. The most marked beneficial effects are seen in the clean mouth and tongue and the gradual diminution of the pulse rate, showing its good effect on the heart. He tabulates his cases and analyzes the symptoms. He thinks alcohol is a valuable factor in feeding, and in some cases of weak heart he gives as much as 24 ounces daily before beginning treatment. From 2 to 4 ounces for adults seem beneficial, using brandy or whisky as the patient desires. For the grass-green defecations occasionally met with he has found 5 to 10 grains of salol rapidly curative. In no case has he had to resort to the cold bath. He never allows the patient to be too warmly covered. If the temperature goes above 103 or 104 F. he has him sponged and placed under a cradle with one or two icebags suspended inside and a sheet over the top. This forms a cold-air bath and is quite efficient. He thinks that no treatment will prevent an occasional hemorrhage after ulceration occurs, but he suggests that large doses of salad oil might saturate the sloughing Peyer's patches, and by stopping the supply of nitrogen to bacilli prevent further ulceration. Drugs are needed as a rule only for complications, and he urges practitioners to give this whey treatment a trial.

Bulletin de l'Academie de Medecine (Paris), October 15.

Urinary Casts. PEHU.—Granular tube-casts are characteristic of epithelial nephritis, even in the absence of indications of acute inflammation, and suggest inflammation in the convoluted tubules. The other varieties of tube-casts have little significance in diagnosis; they merely indicate some modification of the process. Hyalin casts generally accompany disturbances in the circulation, but have no characteristic significance. During the acute phase of epithelial nephritis the granular

casts are numerous, small, and the granules compacted together. In this form they indicate active cellular fermentation. In the subacute stage the granular casts are less numerous, larger, especially when secondary sclerosis is appearing, and an occasional hyalin cast is discovered. When the renal affection is passing into the chronic stage, the albuminuria alone persists, owing to the imperfect regeneration of the convoluted tubules and the formation of an actual cicatrix in the kidney. The tube casts vanish and the prognosis is favorable. When the cure is complete there is no further albuminuria nor casts.

Surgical Treatment of Congenital Cleft Palate. EHRMANN.—Instead of completing the palatoplasty at one sitting, Ehrmann postpones the suturing for a week later at farthest, and considers this modification a great advance in the treatment of quite young children. This is indicated in patients between 6 and 12 years who are frail, with their palate mucosa thin, and also in all cases in which there is not an abundant supply of material for the plastic operation. Secondary hemorrhage is impossible when the operation is done in two sittings, and the liability to suppuration is reduced to the minimum. He sutures the uvula with fine silk, inserting the threads before the field is obscured with blood, and uses silver wire for the remainder of the suture. Wolff has recently published four cases in which the patients were operated on when between six and eighteen months old. At the sixth to ninth year speech was entirely normal. Out of 311 operations on the palate, 192 of the patients were less than 7 years old. The best results were attained at about 2 years of age, which has also been Ehrmann's experience. The deformity of the upper jaw consecutive to palatal operations is caused by complications interfering with regular cicatrization, which it should be the surgeon's care to prevent.

Le Nord Medical (Lille), October 15.

Syphilitic Typhosis. BOURNOVILLE.—When the tongue is moist and the sweat is extremely abundant in a case of apparent typhoid fever, the possibility of a syphilitic typhosis should be borne in mind. The extreme intensity of the headache, eruptive manifestations and their generalization, and the negative serodiagnosis confirm this possibility, especially when there is hyperleucocytosis, decreased number of red corpuscles and decrease in the hemoglobin. Specific treatment will rapidly dispel the typhoid condition. The syphilitic agent may be hypervirulent, or the typhoid may be a superposed infection, or the resisting powers of the organism may be at a low ebb. Bournoville accepts the latter explanation as most probable, as in his experience patients included in this category were always much debilitated from excesses or overwork. The typhoid symptoms appear from the thirtieth to the sixtieth day, usually about the forty-fifth. The abdomen is most sensitive in the right iliac fossa, and the diarrhea is absolutely rebellious. The liver is enlarged, and there is generally alimentary glycosuria, urobilinuria and hypertoxicity of the urine. Only one fatal case has been known, but relapses have sometimes occurred.

Centralblatt f. Chirurgie (Leipsic), November 2.

Functional Tests of the Kidneys in Diagnosis for Renal and Abdominal Surgery. L. CASPER.—THE JOURNAL recently mentioned Casper's announcement at the German Naturforscher Congress of the information to be obtained by separate catheterization of the ureters after the phloridzin test, with determination of the freezing-point of the urine from each kidney. He gives details in this communication. In one case he was able by this means to locate the kidney containing the calculi, impossible to determine by other measures. The tests disclosed that a suprarenal adenoma in one case and cysts in another, did not involve the kidney as supposed. In a fourth patient, the tests differentiated a renal tumor from an appendiceal abscess. In another the differentiation of biliary from renal lithiasis was rendered possible and in three others the negative results of the tests confirmed the diagnosis of simple nephralgia. In sound kidneys the results of the tests are the same on both sides, and a difference between them indicates pathologic conditions. "The sicker the kidney, the lower the values obtained."

Deutsche Med. Wochenschrift (Leipsic), October 24.

Clinical Application of Hemolytic Properties of the Blood. A. LAQUEUR.—About 0.1 c.c. of human blood serum is able to destroy all the red corpuscles in a 5 per cent. mixture of rabbit blood in 0.85 per cent. salt solution. If human blood serum be heated for half an hour to 56 C. it loses the hemolytic property, probably from the destruction by the heat of the "complement" necessary for the process. But it regains it if a small amount of the complete serum be added to it, 0.1 c.c., for instance, to 1 c.c. of the complete serum. Neisser and Doering found this phenomenon constant in all their tests, except in one case in which the blood was derived from a patient in severe uremia. Laqueur has confirmed this phenomenon in two cases of uremia. The addition of the heated serum to the usual proportion of complete serum annuled the hemolytic power of the latter. In one case this phenomenon occurred under his eyes as the patient first showed symptoms of uremia. In another patient with nephritis but no uremia, the serum behaved like normal serum, as was also the case in numbers of other tests with serum derived from other patients, from venesection, placental blood, etc. The blood pressure was extremely high in both the cases of uremia described, and it increased by 15 to 20 mg. whenever there was an exacerbation of the symptoms. Very effective relief was obtained at such times by total wet packs, which were always followed by subjective improvement and fall of the blood pressure. By this means severe uremic attacks were warded off, and the patients succumbed finally to heart failure. It was noticeable that as the fatal termination approached, the blood pressure fell instead of rising with exacerbations, but even when abruptly dropping from time to time, it still remained higher than normal. Two days before death it had fallen to 155 mm. from its previous height of 210 in one case, and to 140 in the other. The determination of the blood pressure in uremia, for which Gaertner's tonometer is admirably adapted in its simplicity, affords not only valuable assistance in diagnosis and prognosis, but also indicates the moment for therapeutic intervention.

Cytodiagnosis of Meningitis. E. BENDIX.—In five cases of tubercular meningitis Bendix found lymphocytes numerous in the cerebrospinal fluid withdrawn by lumbar puncture. In three cases of epidemic meningitis, large polynuclear leucocytes were in the majority, with one exception, in a case protracted through months. In the tuberculous cases, the specific bacilli could be discovered only once. The autopsy confirmed the cytodiagnosis in each case. Bendix considers the presence of polynuclear leucocytes an indication that the process is recent. Lymphocytes, on the other hand, reveal a protracted, chronic process, and hence are valuable in the differentiation of tuberculous from the acute, epidemic variety of meningitis.

Cause of Dacryocystitis. E. RAEHLMANN.—Among 1081 cases of trachoma observed at Dorpat during 1899, the lachrymal sac was affected in 43. Careful anatomic study of these cases, with sections of ten of the sacs, disclosed that the acute dacryocystitis was merely an extension of the typical trachomatous process. The cicatrices that result from the follicular abscesses cause strictures and consequent stenosis. These facts suggest the necessity of appropriate treatment and justify the extirpation of the lachrymal sac in such cases.

Lymphoma Versus Pseudo-Leukemia. E. BECKER.—In this communication from Gerhardt's clinic, various cases of pseudo-leukemia, etc., are described. Analysis of the symptoms and anatomic foundation of these and similar cases has convinced Becker that the designation "pseudo-leukemia" should be discarded. In its place he proposes five groups of affections involving the lymphatic system: 1, lymphosarcomatosis; 2, tuberculous lymphomatosis; 3, syphilitic lymphomatosis; 4, simple hyperplastic lymphomatosis, with the sub-group of infantile splenic anemia, and 5, diffuse lymphomatosis.

Formalin Soap Effective Against Night Sweats in Phthisis. K. DOHRN.—Twelve patients have been treated at the Carolahaus in Dresden by inunctions of a 5 to 10 per cent. formalinized olive-oil fluid soap. All were much benefited and the sweats were completely arrested in seven cases. The entire trunk was rubbed energetically with the soap for a minute and the skin massaged at the same time. The soap was then sponged off with a damp cloth and the body carefully wiped dry. The procedure is peculiarly refreshing to the patients and all sleep better after it is applied each evening. The fumes of the formalin affected the conjunctiva in one patient, but she was unwilling to dispense with the treatment on account of this slight drawback.

Muenchener Med. Wochenschrift, October 22.

Tardy Disturbances After Tracheotomy and Intubation. M. PFAUNDLER.—Reviewing the later history after tracheotomy or intubation of 173 children at Escherich's clinic, it was found that the children who had been intubated were as healthy as the same number of average children, and that no connection between any casual affection of the respiratory passages and the intubation could be discovered. But the case was different with the children on whom tracheotomy had been performed. Slight disturbances were evident in 12.5 per cent. of the tracheotomized, and in 18.8 per cent. of those treated by tracheotomy and intubation. Severer disturbances, such as permanent hoarseness, cicatricial tracheal stenosis, chronic cirrhotic pneumonia or pulmonary tuberculosis were noted in 3.5 per cent. of the intubated; in 12.5 per cent. of the tracheotomized and in 31.3 per cent. of the cases in which tracheotomy and intubation had both been applied. Intubation had been used alone in 141 cases, tracheotomy alone in 16 and both combined in 16.

Wiener Klin. Wochenschrift, October 17.

Incarcerated Hernia in the Lateral Abdominal Wall. C. STERNBERG.—A woman of 61 was suddenly taken sick with vomiting and pains in the abdomen ascribed to some indiscretion in diet. A tumor in the left side of the abdomen extended from Poupart's ligament to the costal arch, circumscribed on the outside but less distinctly outlined toward the median line. It was slightly movable and subsided perceptibly during inspiration. It was not tender and was distinct from the genitalia. The tumor resembled a kidney in shape. There was no dulness over the kidneys. The tumor was first noticed four days before the vomiting commenced. An operation was refused and death ensued in four days. The hernial sac included the omentum and a loop of the small intestine, in a subcutaneous tear in the internal oblique. No trauma nor predisposition on the part of the tissues could be discovered, to account for the sudden hernia, but possibly some unusual muscular effort may have induced it. Vulpius was able to find only 12 cases of hernia into the abdominal side wall in 1891; 4 were incarcerated and 2 of these had resulted from physical exertion, 2 from a stab wound. Franz has reported 2 other cases, both subsequent to trauma. Wyss has published a congenital case in an infant with other malformations. Surgical intervention in these cases of hernia into the abdominal wall may save life and the non-recognition of the hernia may entail the severest consequences. Albert describes a case in which the hernia was diagnosed a lipoma and only the operation disclosed the error. In another case it was assumed to be an abscess and incised, thus creating an artificial anus.

October 24.

Indications for Lithotomy Operations. O. ZUCKERKANDL.—Experience with 150 lithotomies and the statistics published by various writers have convinced Zuckerkandl that suprapubic lithotomy should be limited in its application. The mortality ranges from 13.5 to 28 per cent. except in Assendelft's statistics. He operated on children and by the suprapubic route in all his 460 cases. Keith's experience with a similar material treated by lithotripsy showed only a mortality of .5 per cent. in 375 cases. The highest mortality after perineal lithotripsy is only 9.2 per cent., while Freyer reports 1.3, Guyon 2.5, and Zuckerkandl 3.6 per cent. The introduction of perineal lithotripsy marks a great progress in the treatment of stone in the bladder. Lithotripsy is indicated in all cases in which the stones are freely movable in the bladder and the urethra allows the introduction of the instruments. Perineal lithotripsy is indicated when the urethra does not readily allow the passage of stiff instruments, when the prostate is enlarged and the prostatic portion of the urethra is immoderately long or the passage very narrow, provided that the stone is free and accessible to the instrument. Also in case of stricture of the urethra, fistula or callus formation or when there are calculi likewise in the urethra. Perineal lithotripsy may also be indicated in cases in which it is impossible to complete the lithotripsy owing to incarceration of the stone or swelling of the prostate. Suprapubic incision must be resorted to when the stones are so large that the instruments have no play, or when the stones are in a diverticulum, in a deep fundus behind a protruding prostate or in case of encapsulated or impacted stones, in case of concretions around a foreign body or neoplasms of the bladder, and when an abdominal fistula is planned. The permanent catheter is not an absolute protection against general sepsis, and Zuckerkandl drains in the majority of his cases. As a narcotic for lithotripsy, he has been most pleased with 2.5 to 5 gm. of antipyrin, dissolved in 50 gm. of water, injected into the rectum half an hour before the operation is commenced. The anesthesia thus induced was surprisingly perfect, but in cases of irritable bladder, difficult passage through the prostate or when the size of the stones prolongs the operation, superficial chloroform narcosis, preceded by an injection of morphin, is indicated. Cystoscopy will much facilitate the intervention and disclose a diverticulum or an encapsulated or impacted stone and thus warn against lithotripsy alone. The occlusion of the evacuator by a fragment of a stone is avoided by crushing the stones as fine as possible. In two cases he aimed to bring out the stone intact in this way, and after some work with the pump was able to determine that the stone was firmly impacted in the evacuator and was thus removed whole. In two aseptic cases death occurred from septicemia, probably by infection through some slight injury to the urethra, as no evidences of cystitis could be found in the bladder or kidneys. In another case of chronic cystopyelitis, the bladder must have been perforated, whether from a stone or the pumping it was impossible to decide. The operation proceeded without incident, but peritonitis developed a few days later. Twelve of his 95 patients treated by lithotripsy have had the stones recur; phosphates in 9 and urates in 3. No recurrence was known of oxalate stones. After suprapubic lithotomy, complete retention of urine has been occasionally noted, attributable to the forced distention of the bladder. Since he has been operating with the bladder only moderately filled, this sequel has not occurred.

Diagnosis of Aneurysm of the Mesenteric Artery. G. GABRIEL.—The diagnosis is based, 1, on the existence of some primary valvular affection, recent bacterial endocarditis in the case described; 2, on the existence of hemiplegia, which may be either due to softening or a bacterial endarteritis; 3, on the presence of a rapidly growing tumor in the abdomen for which no other cause can be assigned, and 4, on the youth of the patient. The cerebral symptoms may be due to embolism with consecutive softening or to bacterial endarteritis of some artery in the brain with subsequent aneurysm, rupture and hemorrhage into the brain substance.

October 31.

Biologic Relations Between Milk and Serum. E. MORO.—Neither human nor cow's milk possesses bactericidal properties, but Moro has established that the serum of nursing infants is more bactericidal and hemolytic than the serum of others fed on artificial food. The change from mother's milk to artificial food or vice versa alters the serum in this respect.

Two Cases of Malignant Epithelioma of the Vagina with Intact Uterus. H. SCHMIT.—In both cases the patients were permanently cured after the excision of the malignant

chorio-epithelioma. The tumor was formed of a hematoma containing in its center villi and malignant elements of the chorion evidently derived from the villous surface. The facts observed indicate that harmless villi may be transferred to the vagina during pregnancy or delivery and that the tumor develops later from proliferation of the epithelium. It is possible to conceive that the malignant elements might become completely enclosed in the tumor and repeated hemorrhages induce their necrosis, resulting finally in a spontaneous cure.

Influence of "Stasis-Hyperemia" on Bone Formation. A. BUM.—In a series of experiments on young dogs and rabbits, a ligature was applied to the leg above the fracture, an hour or two each day. It was found that the callus had grown much more luxuriantly on the side on which stasis had been induced in this way. The periosteal callus exhibited much more pronounced calcification and ossification. The fractures were alike on each side.

Giornale Della Accad. di Med. (Turin), August-September.

The Diazo-Reaction. M. LAMPUGNANI.—From analysis of the diazo-reaction as it occurred or failed to occur in 500 patients and a number of healthy persons, Lampugnani concludes that it is the expression of a pathologic process in the organism, connected with the elevation of the temperature. The temperature may be elevated without the reaction, but the latter never occurs with normal temperature. Besides the elevation of the temperature, which is a necessary but not the unique cause of the phenomenon, there must be some other factor, possibly the production of some reducing substance, the immediate effect of which is the diazo-reaction. The pigments in the urine evidently co-operate in the production of the reaction. It was positive in 31 out of 49 cases of typhoid fever and in 9 out of 26 cases of pulmonary tuberculosis. The tuberculous patients who exhibited the reaction all died soon afterward. The diazo-reaction has therefore considerable value for the diagnosis of typhoid fever and for the prognosis of tuberculosis. The tests were all negative in nervous, gastric, renal and rheumatic affections, and in acute and chronic intoxications and heart disease, but the reaction was obtained in the 4 cases of malaria examined and in 17 of erysipelas. It never occurred in the healthy subjects nor in rabbits.

Gastric Digestion in the Insane and the Cure of Sitophobia. G. R. RUATA.—Lavage of the stomach is one of the most useful means at our command in the treatment of the insane, from several points of view. Ruata learned from it that morbid psychic states, accompanied by depression, are characterized by a diminution or disappearance of the secretion of hydrochloric acid, while on the other hand it becomes exaggerated during a condition of agitation and excitement. The hyperemia or anemia of the cerebral cortex makes its influence felt throughout the organism on all the vital functions, exaggerating or depressing them. The secretions altered in consequence reflect in their turn on the functions of the cortex, producing sitophobia in some cases and aggravating the psychosis in all. Hypochlorhydria was almost the rule in the phase of depression in mania, alcoholic pseudo-paralysis and amentia confusionalis, and great benefit was derived in these cases from the systematic administration of hydrochloric acid. In all the insane subjects the proportion of total acidity and of uncombined hydrochloric acid was less than normal, although the peptones were constant. The administration of hydrochloric acid conquered even the most rebellious cases of sitophobia in his experience.

Tamponing the Uterus in Cesarean Section. G. VICARELLI.—The danger of hemorrhage and of infection is avoided by tamponing the uterus after Cesarean section through the abdominal wound, with a strip of gauze five yards long by ten centimeters wide. The uterus contracts over the tampon and holds it firm. It does not interfere in any way with the regular discharge of the lochia nor the involution of the uterus nor the normal cicatrization of the wound. It can be extracted through the vagina in one to three days without the slightest trouble. The tampon renders it possible for the operation to be performed at any moment without waiting for labor as there is no fear of hemorrhage from inertia of the uterus. Vicarelli describes seven patients thus treated, all severe cases of deformed pelvis, the results exceptionally fine for both mother and child.

Spinal Cocainization in Obstetrics. G. VICARELLI.—The conclusions from Vicarelli's experience with eleven maternity cases are unfavorable to this method of analgesia in obstetrics.

St. Petersburger Med. Wochenschrift, October 12.

The Mental and Moral Disposition of Tuberculous Subjects. H. NEUMANN.—Various writers have described the sluggish memory, the inability to think or read on subjects requiring thought, etc., which they have noticed in consumptives, and have tried to evolve a type of psyche characteristic of tuberculosis. Neumann does not agree with them and attributes the laziness of thought and action and the heightened sexual appetite, etc., to the idleness of the inmates of a sanitarium who devote all their attention to eating, sleeping and reclining at stated hours, at most reading novels to while away the time. He thinks it is the duty of those in charge of sanitariums for tuberculosis to include some stated work in the course of treatment and compel the patients to do a certain task each day, individualized to the patient. This is less necessary in case of working people, as they do not lose the habit of working in their two or three months' stay, but a young merchant, for example, might be encouraged to study a foreign language, a student to review certain studies, etc. The success of the treatment will be enhanced if the physician systematically applies measures of this kind to prevent the development of neurasthenia, hysteria and hypochondria.

Books Received

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A TEXT-BOOK OF MEDICINE for Students and Practitioners. By Dr. Adolf Strümpell, Professor and Director of the Medical Clinique at the University of Erlangen. Third American Edition. Translated by Permission from the Thirteenth German Edition, by Herman F. Vickery, A.B., M.D., Instructor in Clinical Medicine, Harvard University, and Philip Coombs Knapp, A.M., M.D., Ex-President of the American Neurological Association. With Editorial Notes by Frederick C. Shattuck, A.M., M.D., Jackson Professor of Clinical Medicine, Harvard University. With 185 Illustrations in the Text, and One Plate. Cloth. Pp. 1242. Price, $6.00. New York: D. Appleton & Co. 1901.

ANATOMY, Descriptive and Surgical. By Henry Gray, F.R.S., Fellow of the Royal College of Surgeons. Edited by T. Pickering Pick, F.R.C.S., Consulting Surgeon to St. George's Hospital; and Robert Howden, M.A., M.B., C.M., Professor of Anatomy in the University of Durham. A Revised American, from the Fifteenth English Edition. With 780 Illustrations, Many of Which Are New. Cloth. Pp. 1257. Price, $5.50 net. Philadelphia and New York: Lea Brothers & Co. 1901.

THE PRACTICE OF OBSTETRICS, by Many Authors. Edited by Charles Jewett, M.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, New York. Second Edition, Revised and Enlarged. Illustrated with 445 Engravings, 48 of Which Are in Colors, and 36 Colored Plates. Cloth. Pp. 781. Price, $5.00 net. New York and Philadelphia: Lea Brothers & Co. 1901.

PUBLIC HEALTH REPORTS. Issued by the Supervising Surgeon-General Marine-Hospital Service, Under the Act of Congress Granting Additional Quarantine Powers and Imposing Additional Duties upon the Marine-Hospital Service, Approved Feb. 15, 1893. Vol. XV. Parts 1 and 2. Nos. 1 to 52. Cloth. Pp. 3182. Washington: Government Printing Office. 1901.

DISCIPLES OF ÆSCULAPIUS. By Sir Benjamin Ward Richardson, M.D., F.R.S. With a Life of the Author by His Daughter, Mrs. George Martin. In Two Volumes. Vols. I and II. With Portraits and Illustrations. Cloth. Pp. 424. Price, $8.00 net. New York: E. P. Dutton & Co. 1901.

A TEXT-BOOK ON DISEASES OF THE EAR, NOSE AND THROAT. By Charles H. Burnett, M.D., E. Fletcher Ingals, M.D., James E. Newcomb, M.D. With Numerous Illustrations. Cloth. Pp. 716. Price, $5.00. Philadelphia and London: J. B. Lippincott Co. 1901.

PROCEEDINGS OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY. September. Paper. Pp. 12. Philadelphia: Published by the Society. 1901.

CHIMICA CLINICA. Dott. Raffaele Supino, Assistence alla Clinica Medica Generale di Pisa. Cloth. Pp. 198. Milano: Ulrico Hoepli. 1902.

L'EPILESSIA. Dottor Paola Pini. Eziologia-Patogenesi Cura. Cloth. Pp. 277. Milano: Ulrico Hoepli. 1902.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Oct. 31 to Nov. 6, 1901, inclusive:

Dallas Bache, colonel, assistant surgeon-general, U. S. A., to his home at Los Angeles, Cal., to await retirement from active service.

Peter W. Beckman, contract surgeon, now in San Francisco, Cal., to proceed to Fort Du Quesne, Utah, for duty at that port.

Horace D. Bloomberg, lieutenant, asst.-surgeon, U. S. A., relieved from further duty at the Army Medical School, to report for duty at the U. S. General Hospital, Fort Bayard, N. M.

George C. Craig, contract surgeon, now at Rock Island, Ill., to report to the commanding officer, Rock Island Arsenal, for duty.

William R. Eastman, lieutenant, asst.-surgeon, U. S. A., recently appointed to report in person to Colonel W. H. Forwood, assistant surgeon-general, U. S. A., president of the faculty of the Army Medical School, Washington, D. C., for the prescribed course of instruction.

Guy L. Edie, major and surgeon, U. S. A., member of an examining board at Columbus Barracks, Ohio.

Robert C. Eve, contract surgeon, previous orders annulling contract, revoked; he is relieved from duty in the Department of the East, and assigned to Fort Sam Houston, Tex., to relieve Contract Surgeon G. Graham Watts, U. S. A.

George H. R. Gosman, lieutenant, asst.-surgeon, U. S. A., member of an examining board at the U. S. Military Academy, West Point, N. Y., vice Captain Franklin M. Kemp, asst.-surgeon, U. S. A., relieved.

Henry S. Greenleaf, lieutenant, asst.-surgeon, U. S. A., member of an examining board at the Presidio of San Francisco, Cal., vice Lieutenant John A. Murtagh, asst.-surgeon, U. S. A., relieved.

Ernest K. Johnstone, major and surgeon, Vols., having tendered his resignation, is honorably discharged from the service of the United States, to take effect Nov. 2, 1901.

Palmer H. Lyon, captain, asst.-surgeon, Vols., now at Lyons, N. J., will, on the expiration of his present sick leave, proceed to Fort Hamilton, N. Y., for temporary duty, to relieve Lieutenant Edwin P. Wolfe, asst.-surgeon, U. S. A.

Walter D. McCaw, major and surgeon, U. S. A., from the Division of the Philippines, to report to the Surgeon-General, at Washington, D. C., for instructions.

Clarence B. Millhoff, lieutenant and asst.-surgeon, U. S. A., resignation accepted, to take effect Nov. 5, 1901.

Edward L. Munson, captain and asst.-surgeon, U. S. A., detailed for duty as assistant professor of hygiene at the Army Medical School, Washington, D. C.

Robert M. O'Reilly, lieutenant-colonel and deputy surgeon-general, U. S. A., from Fort Monroe, Va., to Washington, D. C., on official business pertaining to the Medical Department, and on the completion of this duty to rejoin his proper station.

Charles A. Ragan, lieutenant and asst.-surgeon, U. S. A., recently appointed, to report in person to Colonel W. H. Forwood, assistant surgeon-general, U. S. A., president of the faculty of the Army Medical School, for the prescribed course of instruction.

Charles Richard, major and surgeon, U. S. A., member of an examining board at Fort Leavenworth, Kan.

Edward G. Seibert, contract surgeon, to report in person to Major Edward C. Carter, surgeon, U. S. A., attending surgeon, Washington, D. C., for duty.

Paul Shillock, major and surgeon, U. S. A., member of an examining board at Fort Riley, Kan., vice Major Charles E. Woodruff, surgeon, U. S. A., relieved from this duty.

Herbert M. Smith, lieutenant and asst.-surgeon, U. S. A., relieved from duty at the Army Medical School, Washington, D. C., to report for post duty at Fort Leavenworth, Kan., Nov. 2; member of an examining board at Fort Leavenworth, Kan.

Alexander N. Stark, captain and asst.-surgeon, U. S. A., from temporary duty at Fort Monroe, Va., to rejoin his proper station at Fort McHenry, Md.

Sandford H. Wadhams, lieutenant and asst.-surgeon, U. S. A., member of an examining board at Columbus Barracks, Ohio.

Philip G. Wales, captain and asst.-surgeon, U. S. A., from Fort Du Quesne, Utah, to Denver, Colo., for duty as attending surgeon and examiner of recruits at that place.

G. Graham Watts, contract surgeon, on being relieved by Contract Surgeon R. C. Eve (see above), will report in person to the chief surgeon, Department of Texas, for annulment of contract.

Edwin P. Wolfe, lieutenant and asst.-surgeon, U. S. A., from Fort Hamilton, N. Y., to duty at Fort Bliss, Texas.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Nov. 9, 1901:

Surgeon F. Anderson, detached from the Naval Dispensary, Washington, D. C., November 7, and ordered to the *Alabama*, November 9, as relief of Surgeon E. H. Green.

Surgeon E. H. Green, detached from the *Alabama*, November 9, and ordered to duty as a member of the medical examining board, Washington Navy Yard, Nov. 15, as relief of Surgeon A. C. H. Russell.

Medical Director J. C. Ayers, retired from active service, November 3, 1901, by operation of law, under the provisions of Section 1444, Revised Statutes, upon which date he will have reached the age of 62 years; with rank and three-fourths the sea-pay of the next higher grade, under the provisions of Section 11, Navy Personnel Law.

Asst.-Surgeon R. M. Young, detached from the *Columbia* and ordered to the *Constellation* for temporary duty.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the fourteen days ended Oct. 31, 1901:

Surgeon R. D. Murray, appointed as appraiser to place valuation on property of State Board of Health of Florida used for quarantine purposes at Key West, Fla.

Surgeon F. W. Mead, granted leave of absence for one day.

Surgeon J. H. White, appointed as appraiser to place valuation on property of State Board of Health of Florida used for quarantine purposes at Boca Grande, Fla. To proceed to Brunswick quarantine as appraiser, and to the South Atlantic quarantine station on special temporary duty.

Asst.-Surgeon John McMullen, granted leave of absence for seven days.

Asst.-Surgeon H. B. Parker, relieved from duty at New Orleans, La., and directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty. Bureau order of Oct. 18, 1901, directing Asst.-Surgeon Parker to proceed to Washington and report to the Director of the Hygienic Laboratory for duty, suspended.

Asst.-Surgeon C. C. Pierce, to proceed to Mullet Key, Fla., for special temporary duty.

A. A. Surgeon Frank Boyd, granted leave of absence for twenty-five days from November 1.

A. A. Surgeon V. B. Gregory, relieved from duty at Tampico, Mex., and directed to proceed to Rio de Janeiro, Brazil, for duty in the office of the U. S. Consul General.

A. A. Surgeon J. W. Hargis, granted leave of absence for ten days from October 19.

Hospital Steward C. W. Stephenson, granted leave of absence for twenty-three days from November 4.

Surgeon H. W. Austin, bureau letter of Sept. 28, 1901, granting leave of absence for one month, amended so that said leave shall be for twenty-one days only.

P. A. Surgeon H. D. Geddings, to assume temporary command of Hygienic Laboratory during absence of P. A. Surgeon M. J. Rosenau.

P. A. Surgeon A. R. Thomas, to proceed to Liverpool, England, for duty.

Asst.-Surgeon John McMullen, granted four days' extension of leave of absence.

A. A. Surgeon B. F. Duke, granted fifteen days' leave of absence from October 25.

A. A. Surgeon R. E. Ebersole, granted three days' leave of absence under paragraph 181 of the regulations.

Hospital Steward, J. E. Beck, granted seven days' leave of absence, from Oct. 20, 1901, under paragraph 181 of the regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Nov. 9, 1901:

SMALLPOX—UNITED STATES.

Illinois: Peoria, Oct. 1-31, 6 cases; Springfield, Oct. 2-Nov. 2, 26 cases.
Iowa: Ottumwa, Sept. 28-Nov. 2, 31 cases.
Kansas: Wichita, Oct. 19-26, 3 cases.
Kentucky: Lexington, Oct. 25-Nov. 2, 3 deaths.
Louisiana: New Orleans, Oct. 25-Nov. 2, 7 cases.
Massachusetts: Boston, Oct. 19-Nov. 2, 22 cases, 2 deaths; Newton, Oct. 19-26, 2 cases.
Michigan: Detroit, Oct. 19-Nov. 2, 2 cases.
Nebraska: Omaha, Oct. 19-Nov. 2, 14 cases; South Omaha, Oct. 17-24, 6 cases.
New Jersey: Camden, Oct. 19-26, 5 cases, 1 death.
New York: Oct. 26-Nov. 2, Elmira, 1 case; New York, 5 cases, 4 deaths.
Ohio: Youngstown, Oct. 12-19, 2 cases.
Pennsylvania: Allegheny City, Oct. 18-25, 1 case; Lebanon, Nov. 2, 2 cases; Norristown, Oct. 26-Nov. 2, 7 cases, 1 death; Philadelphia, Oct. 19-Nov. 2, 111 cases, 22 deaths; Pittsburg, Oct. 26-Nov. 2, 6 cases.
Vermont: Burlington, Oct. 26-Nov. 2, 3 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Oct. 6-19, 6 cases.
Belgium: Antwerp, Oct. 6-12, 2 cases, 1 death.
Canada: Halifax, Oct. 19-Nov. 2, 13 cases; Quebec, Oct. 26-Nov. 2, 41 cases; Winnipeg, Oct. 26-Nov. 2, 1 case.
Colombia: Panama, Oct. 20-28, 300 cases.
Great Britain: Oct. 12-19, Liverpool, 1 case; London, 172 cases, 12 deaths.
Russia: Moscow, Oct. 5-12, 5 cases, 1 death; Odessa, Oct. 12-19, 3 cases; Warsaw, Oct. 7-14, 3 cases.
Uruguay: Montevideo, Aug. 24-Sept. 14, 75 cases, 11 deaths.

YELLOW FEVER.

Colombia: Bocas del Toro, Oct. 15-23, 2 cases.
Mexico: Vera Cruz, Oct. 19-26, 17 cases, 2 deaths.

CHOLERA.

India: Bombay, Oct. 1-8, 3 deaths; Calcutta, Sept. 28-Oct. 5, 3 deaths.

PLAGUE—UNITED STATES AND INSULAR.

California: San Francisco: Oct. 20-30, 1 case, 1 death.
Philippines: Manila, Sept. 7-21, 5 cases, 3 deaths; Taguig, Sept. 7-14, 1 death.

PLAGUE—FOREIGN.

Great Britain: Glasgow, Nov. 1, 4 cases; Liverpool, Oct. 30, several cases, 2 deaths.
India: Bombay, Oct. 1-8, 174 deaths; Calcutta, Sept. 22-Oct. 5, 19 cases.
Turkey: Samsoun, Oct. 1, 9 cases, 1 death.